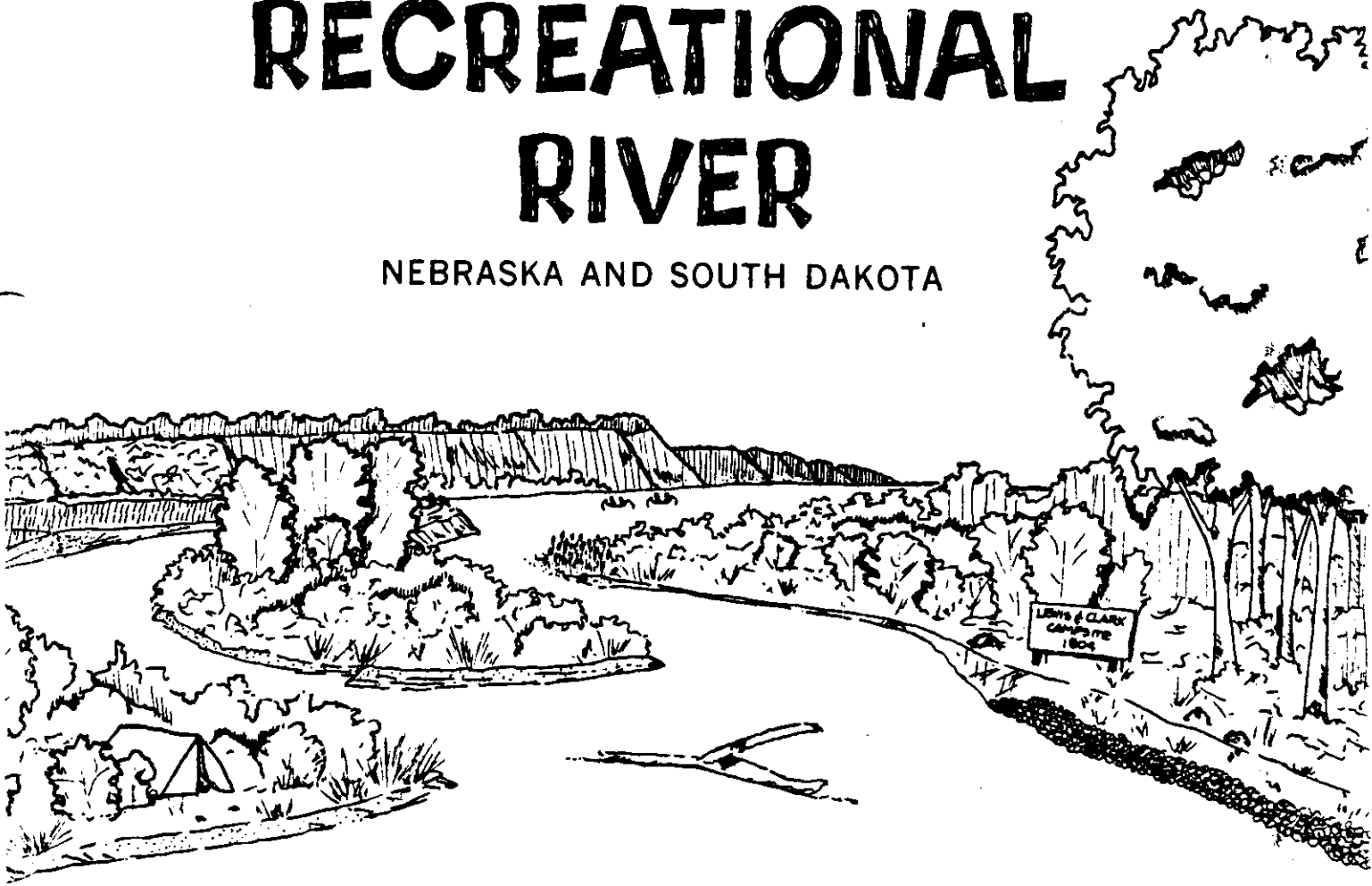


FINAL ENVIRONMENTAL IMPACT STATEMENT

MISSOURI NATIONAL RECREATIONAL RIVER

NEBRASKA AND SOUTH DAKOTA



OMAHA DISTRICT CORPS OF ENGINEERS
DEPARTMENT OF THE ARMY
JULY 1980

FILING DATE: 12 Aug 1980

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MISSOURI NATIONAL RECREATIONAL RIVER-NEBRASKA AND SOUTH DAKOTA

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Omaha, Nebraska

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ABSTRACT: The Missouri River from Gavins Point Dam to Ponca State Park, Nebraska, is one of the few remaining relatively natural, braided reaches of the Missouri River. The Corps of Engineers and the Heritage, Conservation, and Recreation Service have investigated public concerns related to streambank erosion control and recreational development along this river reach. Two plans were initially considered and one was selected for detailed study. The selected plan consists of development of the river reach as a recreation river under the Wild and Scenic Rivers Act. This plan would meet all streambank erosion control and recreational development needs and would also protect most all natural and cultural values present in the project area. The plan was selected based on its performance in addressing the identified public concerns and its contributions to the goals of Environmental Quality.

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I. SUMMARY

MAJOR CONCLUSIONS AND FINDINGS

1.1 On 18 February 1977, the U.S. Army Corps of Engineers, Missouri River Division, filed with the Council on Environmental Quality (CEQ) a Review Report and Draft Environmental Statement (DES) entitled "Missouri River - South Dakota, Nebraska, North Dakota, Montana." This statement was broad in scope and discussed:

- Additions to the hydroelectric powerplants at Fort Peck, Montana, and Garrison, North Dakota, and construction of a pumped-storage plant adjacent to Lake Francis Case in Gregory County, South Dakota;
- Construction and operation of onsite northern pike fish rearing ponds adjacent to Lakes Oahe and Francis Case, South Dakota, to enhance the fishery in those lakes;
- Bank protection at selected locations in open river reaches between Fort Peck, Montana, and Ponca State Park, Nebraska, together with recreation access at several locations; and
- Designation and development of the Missouri River between Gavins Point Dam and Ponca State Park, Nebraska, as a Recreational River under provisions of the Wild and Scenic Rivers Act.

1.2 More specifically in regard to the Missouri National Recreational River, the statement presented two intermediate plans to provide recreational development and stabilization of critical erosion of the streambanks along the Missouri River from Gavins Point Dam to Ponca State Park, Nebraska: Plan A - designation and development of the river reach as a recreation river under the Wild and Scenic Rivers Act, and Plan B - development of river access in conjunction with bank stabilization under the authority of the Federal Water Project Recreation Act.

1.3 On 5 May 1978, the Chief of Engineers filed a Revised DES with CEQ for the purpose of departmental review. While the Revised DES was being circulated, the U.S. Army Corps of Engineers, Omaha District, began preparing a final environmental statement on the bank protection element of the Review Report. On 31 July 1978, the Omaha District filed with CEQ a final environmental statement entitled "Missouri River, South Dakota, Nebraska, North Dakota, Montana - Streambank Erosion Control."

1.4 Prior to the development of detailed plans for the Missouri River segment from Gavins Point Dam to Ponca State Park, Nebraska, the segment was designated a National Recreational River on 10 November 1978. In response to the designation, the Heritage, Conservation and Recreation Service (HCRS) prepared a plan entitled "Missouri National Recreational River Management Plan" to guide the administration of the river

reach as a component of the National Wild and Scenic Rivers System. In their plan, the HCRS adopted the Army Corps of Engineers Revised DES as the draft EIS for the Missouri National Recreational River. Plan A of the Revised DES is the plan described in this final EIS.

SLOPPY

1.5 Implementation of the Missouri National Recreational River Management Plan would provide additional recreation opportunities, preserve and protect significant cultural resources, protect and enhance valuable fish and wildlife resources, and protect and enhance the visual resource of the designated river reach, as well as reduce streambank erosion.

RELATIONSHIP TO ENVIRONMENTAL REQUIREMENTS

1.6 The relationship of each plan to the requirements of environmental laws, executive orders, and other policies is discussed below.

1.7 Fish and Wildlife Coordination Act of 1958 (Public Law 85-624). This study has been, and will continue to be, fully coordinated with the U.S. Fish and Wildlife Service (FWS).

1.8 Flood Control Act of 1944, as Amended, and Federal Water Project Recreation Act of 1965 (Public Law 89-72). The recreational potential of the selected plan has been thoroughly investigated and is discussed throughout the text of this Final Environmental Impact Statement (FEIS).

1.9 Water Resources Planning Act of 1965 (Public Law 89-80). This Act established a Water Resources Council. The Water Resources Council, in turn, established Principles and Standards for Planning Water and Related Land Resources in September 1973 and revised them in April 1980. These principles and standards were not stringently applied in the writing of this FEIS due to the fact that the selected plan has already been authorized by Congress.

1.10 National Historic Preservation Act of 1966 (Public Law 89-665). The procedures for compliance with this Act were developed in coordination with the Nebraska and South Dakota State Historic Preservation Officers and the Interagency Archeological Services, Denver, Colorado. Compliance for the selected plan will take several years and will be accomplished in three phases: (1) a literature and records search to be accomplished in 1980-81, (2) a field survey to be conducted in 1981-82, and (3) protection and mitigation to be conducted thereafter.

1.11 National Environmental Policy Act of 1969, as Amended. This FEIS is in compliance with the procedural guidance for the Civil Works Program of the U.S. Army Corps of Engineers (Federal Register, 29 June 1979). This guidance supplements the Council on Environmental Quality 29 November 1978 Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act.

1.12 Clean Water Act of 1977 (Public Law 95-217). Compliance with Section 404(b) of the Clean Water Act will be accomplished during the detailed design stage of the fill activities associated with each plan.

1.13 Endangered Species Act of 1973, as Amended (Public Law 93-205). Consultation with FWS pursuant to Section 7 of the Endangered Species Act has been accomplished. Exhibit I contains a copy of the biological opinion of the FWS.

1.14 Executive Order 11988, 24 May 1977, Flood Plain Management. The selected plan is in compliance with this executive order. It is the plan most responsive to the planning objectives established by the study; and no practicable alternative exists to locating the action in the flood plain.

1.15 Executive Order 11990, 24 May 1977, Protection of Wetlands. An element of the selected plan is the enhancement of backwater areas. This element was one of the reasons the plan was designated as the selected plan.

RELATED ENVIRONMENTAL IMPACT STATEMENTS

1.16 This FEIS is tiered herein to the Revised DES discussed in paragraph 1.3 in accordance with Part 1502.20 of the CEQ 29 November 1978 Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act. All pertinent discussions in the broader statement have been extracted and incorporated into this FEIS.

1.17 The final environmental statement entitled "Missouri River, South Dakota, Nebraska, North Dakota, Montana-Streambank Erosion Control" discusses in detail the impacts of potential erosion control measures in open river reaches between Fort Peck, Montana, and Ponca State Park, Nebraska. It therefore discusses the impacts of the bank stabilization element of the selected plan. Furthermore, most recipients of the Streambank Erosion Control Final Environmental Statement are also recipients of this FEIS. In order to cut down on the size of this statement without impeding agency and public review, the Streambank Erosion Control Final Environmental Statement is therefore incorporated by reference herein in accordance with Part 1502.21 of the CEQ 29 November 1978 Regulations.

II. NEED FOR AND OBJECTIVES OF ACTION

AUTHORITY

2.1 The following documents authorize detailed study of the segment of the Missouri River from Gavins Point Dam, Nebraska, 59 miles downstream to Ponca State Park, Nebraska, as a recreational river within the National Wild and Scenic Rivers System:

- Public Law 90-542 (Wild and Scenic Rivers Act)
- Public Law 95-625 (Natural Parks and Recreation Act of 1978)
- Missouri National Recreational River Management Plan, U.S. Department of the Interior, Heritage, Conservation, and Recreation Service (Federal Register 26 March 1980).

2.2 Public Law 90-542 provides for a national wild and scenic rivers system comprised of selected wild, scenic, and recreational rivers of the Nation. Section 3(a) of this Law lists the selected rivers designated as components of the system. Section 3(a) has been amended by Section 707 of Public Law 95-625 to include the Missouri River segment from Gavins Point Dam, Nebraska, to Ponca State Park, Nebraska, as a recreational river segment. The explicit intent of Congress in Section 707 was that the Secretary of the Interior and the Secretary of the Army upon consultation with State and local governments and other interested organizations and associations should: (1) construct and maintain bank stabilization work to protect outstanding remarkable scenic, recreational, fish and wildlife, historic, cultural, and other similar values of the river corridor for the benefit and enjoyment of present and future generations, (2) construct appropriate recreation facilities, and (3) permit access for pumping and associated pipelines as may be necessary to assure an adequate supply of water for adjacent landowners and for fish, wildlife, and recreational uses outside the river corridor.

2.3 Section 3(b) of Public Law 90-542 directs the agency charged with administration of a component of the system to establish detailed boundaries of the component and prepare a Plan for necessary developments in connection with its administration. The Secretary of the Interior, administrator of the component, has complied with the Section 3(b) directives by preparing a Missouri National Recreational River Management Plan (Federal Register 26 March 1980).

2.4 In addition to publication of the Missouri National Recreational River Management Plan, the Secretary of the Interior, in compliance with Section 707 of Public Law 95-625, has entered into a written Cooperative Agreement with the Secretary of the Army to define the

responsibilities of each agency in implementing the Missouri National Recreational River. A copy of the agreement is provided as exhibit II.

2.5 In response to this Cooperative Agreement, the Department of the Army, acting through the Chief of Engineers, has prepared a General Design Memorandum (GDM) which provides a more detailed explanation of the project and how it would be implemented. A copy of this GDM is being circulated with this FEIS.

PUBLIC CONCERNS

2.6 The significant resources of the Missouri River have been generally well known from the time of earliest exploration until the present day. However, concern about protecting the significant natural, cultural, and recreational resources in the 58-mile reach of the Missouri River from Gavins Point Dam to Ponca State Park did not begin to culminate until the late 1960's. In the early 1970's, intense local concerns about conservation, erosion control, public access, and recreational uses of this river led to a grass-roots movement to seek ways to control a worsening erosion problem and yet preserve a more or less natural river. Diverse elements found a common meeting ground predicated on combining bank stabilization with all possible retention of the existing natural resources of the river. Emerging as the organized spokesman for these interests was the Missouri River Bank Stabilization Association (MRBSA), a local organization of landowners; environmentalists; hunting, boating, and fishing interests; and conservationists. It was this organization that was the driving force behind the movement which culminated in the inclusion of this segment of the Missouri in the National Wild and Scenic Rivers System.

PLANNING OBJECTIVES

2.7 Planning objectives developed for the Gavins Point Dam to Ponca State Park Missouri River reach were derived from the aforementioned public concerns and related resource management needs. The major planning objectives were:

- Reduce streambank erosion in the designated river reach;
- Provide additional recreational opportunities;
- Preserve and protect significant cultural resources;
- Protect and preserve valuable fish and wildlife resources; and
- Protect and preserve the visual resource of the designated river reach.

III. ALTERNATIVES

PLANS ELIMINATED FROM FURTHER STUDY

3.1 Only two plans were considered in late Stage 2 planning of the original Corps study. Only one plan was retained in Stage 3; both plans are described below.

3.2 The plan which was eliminated was development of river access in conjunction with bank stabilization under the authority of Public Law 89-72. The Federal Water Project Recreation Act of 1965 (Public Law 89-72) requires that consideration be given to opportunities for outdoor recreation during the planning for water resource projects and that non-Federal bodies be given the opportunity to cost-share recreation development with the Federal Government on a 50-50 basis. This plan would have provided access and service roads and boat launching, sanitary, and related recreational facilities. The plan was eliminated because it did not provide for adequate protection or preservation of cultural or biological resources.

WITHOUT CONDITION (NO ACTION)

3.3 Without conditions that are expected to occur in the absence of any further Federal action along this segment of the Missouri River predominantly include the continuation of farming and recreation. The intensity of some of these uses, especially recreation, subdivisions for vacation homes, and protection of the high banks to reduce erosion losses would likely increase in some segments.

3.4 A major portion of this river segment is in private ownership. A high potential exists for subdivisions in development of vacation homes, especially near Yankton and Vermillion, South Dakota.

3.4 Continuation of high bank erosion control is expected to continue under this alternative. Non-Federal erosion control measures are assumed to continue throughout this reach to protect both agricultural lands and recreational home development land. The methods used would be those that are most cost-effective and not necessarily compatible with those required in the preferred alternative - Designation and Development as a Recreation River (described below). Also, it is assumed that no measures would be taken to protect instream islands and sandbars which are an integral environmental resource on this segment of the Missouri River.

PLANS CONSIDERED IN DETAIL

DESIGNATION AND DEVELOPMENT AS A RECREATION RIVER

3.6 The Wild and Scenic Rivers Act (Public Law 90-542) identifies the U.S. Departments of the Interior and Agriculture as the Federal agencies to study rivers for their eligibility and proposed classification under this Act. The secretaries of the two departments have delegated the responsibilities for such studies to HCRS and the Forest Service, respectively. HCRS has provided assistance in the Corps' study of the Gavins Point Dam to Ponca State Park reach of the river. Inclusion of National Wild, Scenic, and Recreational River findings and recommendations in the Review Report for Water Resources Development, South Dakota, Nebraska, North Dakota, and Montana, then, was based on involvement of the HCRS and several Congressional actions directing Corps' studies of the Missouri River. As a result of this effort, the river was designated a National Recreational River on 10 November 1978. Development of this designated Recreational River constitutes the selected plan.

3.7 Development of the river reach under the Wild and Scenic Rivers Act permits preservation of specified river features that are recognized as having outstandingly remarkable natural values. Identified to date are the river setting at James River Island; the general high bank shoreline forest dominated by cottonwood trees; clusters of sandbars; and the Nebraska wooded bluffs, particularly at river miles 763, 776, and 787. This combination of features is unique to the Missouri River from its mouth to the North Dakota-Montana border. In addition, preservation of the sandbar clusters will permit their continued nesting use by the interior least tern, a rare shorebird that is being studied for inclusion on the Endangered Species List. Preservation of these sandbar areas also permits their continued use as a significant spring migration staging area for waterfowl. The "between-high bank" physiographic features of the river, which include deep holes, shallows, near quiet water chutes, fast river current, and shifting sand bottom, will also be preserved.

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3.8 To accomplish the needed preservation, about 14,500 acres of scenic and recreation easements are estimated to be required. Also required will be the construction of erosion protection works along seriously eroding banklines, including banklines along large islands. Only those types of structures shown by evaluation under Section 32 of the Water Resources Development Act of 1974 to be compatible with the Wild and Scenic River designation are to be incorporated.

3.9 Development to accommodate public use of this reach of the river includes acquisition of about 400 acres of land from willing sellers
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and construction of sanitary, river access, and camping facilities. In addition, existing river access facilities operated by State and local government will be upgraded as necessary to permit all weather use. Recreation facility development will initially support 500,000 more visitors per year, with an additional ultimate increase of 750,000 (due to regional and national recognition stemming from Wild and Scenic River designation).

3.10 Implementation of the selected plan will be divided between two Federal agencies. The Secretary of the Interior, acting through the Assistant Secretary for Fish and Wildlife and Parks, will administer the river. The Secretary of the Army, acting through the Chief of Engineers, will be responsible for day-to-day management of the river reach.

3.11 There are no mitigation requirements for this plan because development of the recreational river includes measures to preserve and/or enhance all significant biological and cultural resources in the river corridor.

3.12 Specific details of this plan are provided in the GDM that is being circulated with this FEIS. The location of the Missouri National Recreational River is shown on plate 1 of the GDM. Plates 2-10 contain aerial mosaics of the river reach. Existing public use areas, scenic areas, potential public use areas, completed erosion control work, current erosion areas, and the approximate corridor boundary are delineated on these aerial mosaics. Upon reviewing these plates, the reader should take note that: (1) the extent of the currently eroding areas may expand or shrink in time, and (2) the approximate corridor boundary is a projected maximum boundary.

COMPARATIVE IMPACTS OF ALTERNATIVES

3.13 A comparison of the impacts of the selected plan and the No Action alternative upon significant resources in the study area are presented in table 1. These impacts are expounded upon in section V.

Table 1
Comparative Impact of Alternatives

Alternatives	Natural Vegetation	Fishery	Recreational Resources	Cultural Resources
Development As A Recreation River	(-) Destruction of some habitat for recreation purposes (+) Preservation of most habitat	(+) Maintenance and enhancement of most aquatic habitat	(+) Result in 1,750,000 recreation days annually	(+) Protection of most sites as provided by law (-) Loss of portions of resources when encountered during construction
No Action	(-) Destruction of most habitat by erosion, tree clearing, and for recreation purposes	(-) Destruction of some aquatic habitat	(+) Result in 1,000,000 recreation days annually	(-) No protection of any sites and probable destruction of many sites

IV. AFFECTED ENVIRONMENT

ENVIRONMENTAL CONDITIONS

4.1 The portion of the Missouri River is in the eastern portion of the States of Nebraska and South Dakota. The river length in the study area is approximately 58 miles and includes the area from immediately below Gavins Point Dam at the 1965 river mile 811 downstream to Ponca State Park, Nebraska, at the 1965 river mile 752. The land adjacent to the river ranges from a relatively level flood plain to steep tree-covered bluffs on the Nebraska side and flood plain on the South Dakota side.

4.2 The river channel in this area remains essentially in a natural condition, unaltered by man; however, the river flow is regulated through the Gavins Point Dam. Flows during years of normal water supply vary seasonally between 35,000 c.f.s. during the spring, summer, and fall months and 15,000 c.f.s. or less during winter. The study reach is free from any impoundments and other structures which might impede flow. Riverbanks vary from relatively flat sandy beach areas to vertical banks 10 to 15 feet high where active erosion is taking place.

4.3 Natural vegetation along the study segment is composed primarily of two plant communities. These are the flood plain forest of willow and cottonwood and the elm, oak woodland typical of the bluffs that border the flood plain in Nebraska. Aquatic vegetation is not abundant.

4.4 An abundance of fish species can be found along the study corridor. The unchannelized condition of the river in the study reach provides a diversity of habitat for fish that was common through most of the Missouri River prior to its alternation by man.

4.5 Wildlife in the study segment is fairly abundant. The presence of 48 species of mammals has been documented. The river study corridor is also the year-round home for 25 bird species.

4.6 Water quality data measurements have been collected in this segment of the Missouri River in the upstream reaches at Gavins Point Dam and Yankton, South Dakota, and near the mouth of the two major tributaries, the James River and the Vermillion River. Overall, the quality of the water is good. Degrading influences occur farther downstream in the vicinity of Sioux City, Iowa.

4.7 This section of the Missouri River is a potential major recreational resource because of its nearness to major population centers and its availability for year-round recreational use. Lack of public access to the river and lack of developed recreational facilities, however, presently limit use of this resource.

4.8 The major use of the land adjacent to the river is for agricultural purposes, for both irrigated and non-irrigated crops, and for pasture.

4.9 The river corridor, as shown on plates 2-10 in the GDM, has never been systematically surveyed for cultural resources. A survey, however, is currently underway.

SIGNIFICANT RESOURCES

4.10 Significant resources in the study area are natural vegetation, a fishery, recreational resources, and cultural resources. The significance of these resources are expounded upon in the paragraphs below.

4.11 Natural Vegetation. Varying stages of flood plain vegetative succession are evident throughout the project area. On the sandbars and newly deposited accretion lands adjacent to the riverbanks, pioneer species of flood plain succession exist. These include annual weeds and grasses, sedges, and seedling willow and cottonwood. Farther back from the river where lower water table elevations occur, larger willow and cottonwood trees dominate. Still farther back from the waters edge, a flood plain forest consisting mainly of cottonwoods on the highest banks and islands dominate the flood plain vegetation. Understory types in this mature cottonwood forest consist mainly of dogwood, sumac, wild grape, and poison ivy. Although remnant groves remain, much of the mature cottonwood forest on the high banks adjacent to the river has been replaced with pasture and cultivated cropland. These feature the most mature examples of the forest. Two large islands also support substantial groves of mature vegetation.

4.12 In contrast to mixed flood plain forest and agriculture use on the flood plain are the hardwood forests of the adjoining bluffs in Nebraska. There are several places in the project area where the river flows at the base of the bluffs. The bluffs with their hardwood forest dominate the scene in these reaches. The slopes are predominately north facing and support a dense growth of oak, ash, mulberry, and walnut. Burr oak is by far the predominant species. Where grazing has been limited, a good understory shrub layer is present. Dogwood and sumac are typical shrub plants. Near the hilltops where soil moisture is less abundant and where there is a south or west exposure, the forest is replaced by native grasses mixed with yucca. The variety of vegetation types, which differs from the flood plain forest, adds to the overall diversity of the project area.

4.13 A survey of the project area identified the use of this diverse habitat by 48 species of mammals. Small mammals, including mice, voles, bats, moles, rats, and ground squirrels, make up almost 60 percent of these species, and furbearers contribute another 20 percent. White-tailed deer is the only large mammal in the project area; however, an occasional mule deer moves into the uplands adjoining the

river from the west. Coyote, red fox, and badger are also common. As with the reptiles, the species composition of the mammals has not changed significantly from historic times, except for the loss of the big herbivores and the grizzly bear. The community makeup, however, has been affected by land use changes.

4.14 The natural vegetation of the river corridor also provides a year-round home for 25 bird species. Fifty-eight species commonly nest in the area in addition to the year-round residents, while 15 additional species are common winter residents. Over 115 species regularly use the corridor during spring migration, and 110 of these species return through the area during fall migration. This number of species represents about one-third of the bird species that are present in the Missouri River Basin either as regular residents, common visitors, or as occasional visitors. Except for a few introduced species and a couple of recently extinct species, there is very little change in the bird community from the historic past. The migration of waterfowl and shorebirds along the river corridor remains one of the most important ornithological occurrences in the area. This is particularly true during spring migration. The interior least tern, a rare shorebird that nests on sandbars, is being considered for inclusion on the Federal endangered species list. The bald eagle, a bird already on the endangered species list, uses the forested area for winter roost sites. Trees overhanging the flowing water areas are also used by the bald eagle as feeding perches.

4.15 Fishery. Although the main stem dam system has altered the Missouri River's traditional pattern of flow and significantly reduced its sediment load in this river reach, most of the native fish species are still present. The dominance and abundance of specific species in the fish community, however, have been modified, and there have been a few species introduced into the river. Table 2 lists the principal fish species presently found in the project area. Of these species, sauger, carp, channel catfish, goldeye, white bass, and freshwater drum are the most abundant fish found in the fisherman's creel. A recent study shows that the Missouri River sport fishery compares favorably with other rivers in the United States. The study also showed that the annual rates of catch and harvest were greater in the project area than any other portion of the river including the Gavins Point Dam tailwaters.

Table 2
Principal Species of the Fish Community
Found in the River Study Reach

Shovelnose Sturgeon*	Smallmouth Buffalo
Gizzard Shad	Bigmouth Buffalo
Goldeye*	Shorthead Redhorse
Carp*	Flathead Catfish
River Carpsucker*	Walleye
Channel Catfish	Freshwater Drum
Sauger*	Emerald Shiner
Paddlefish	Red Shiner
Shorthose Gar	Sand Shiner
Longnose Gar	White Bass
Blue Sucker	

*Dominant

4.16 Recreational Resources. Federal lands administered by the Corps of Engineers are located immediately below the Gavins Point Dam on both the South Dakota and Nebraska sides. The area contains four major campgrounds with approximately 290 camp pads, a large lighted fishing pier, approximately 1 mile of shoreline for fishing, a 300-foot swimming beach, and three boat ramps.

4.17 The South Dakota Department of Game, Fish, and Parks owns and manages a 200-acre recreation area located 30 miles downstream from Gavins Point Dam. This area, known as the Clay County State Recreation Area, contains camp spaces, picnicking sites, and boat launching facilities.

4.18 The Nebraska Game and Parks Commission owns and manages Ponca State Park (nearly 900 acres) located just over 58 miles downstream from Gavins Point Dam. Ponca State Park consists mainly of forested bluffs with some accretion land at the base of the bluffs where fishing and boating access is available. The facilities include a boat launching area, approximately 300 camp pads, picnic areas, cabins, a large swimming pool, and a variety of other recreation facilities.

4.19 The three counties located in South Dakota along the river reach provide public access to the river; however, Clay County Park which contains over 200 acres is located adjacent to the Clay County State Recreation Area and complements recreation access to the river. Of the two counties on the Nebraska side, only Cedar County provides public access with two boat ramps. One ramp is located in Cedar County Park, 11 miles downstream from Gavins Point Dam, and the other is located on private land at the Sportman's Steak House, 25 miles downstream from

Gavins Point Dam. This boat ramp was constructed on privately owned land by the county through an agreement with the landowner and is available for public use.

4.20 The City of Yankton, South Dakota, owns approximately one-half mile of the town's riverfront land, as well as two parcels of land in Nebraska on either side of the U.S. Highway 81 bridge. The riverfront land in town is used for municipal purposes such as the water and sewage plants and for public access. Public recreation facilities include a boat ramp, picnic tables and shelters, a playground, and ball diamonds. On the Nebraska side, the City of Yankton owns two timbered areas which have no development. One area is located on each side of the bridge. Access is attainable to the river's edge across trails in these two areas.

4.21 A few small, privately operated recreational enterprises are located along the river. These include boat rentals and charter, lots for cabins and trailers, overnight camping facilities, picnic areas, and private access.

4.22 In Cedar County, Nebraska, there are two short stretches of county road that parallel the river at locations 24 and 27 miles downstream from the dam. This is the only area where a road closely parallels the river. One county road and several private roads lead to a dead end at the river; however, the private roads provide no public access for river use. Lands adjacent to these roads are privately owned.

4.23 At present, the area just below Gavins Point Dam supports the heaviest recreational use. Downstream from Gavins Point Dam, recreational use decreases due to the diminishing amount of recreational facility development and access points.

4.24 An estimated 950,000 recreation days of use occurred in the reach from Gavins Point Dam to Ponca State Park in 1976. Swimming and fishing constitute the major uses with 298,000 and 214,000 recreation days, respectively. Camping accounts for 129,000 recreation days, while hunting, picnicking, boating, and canoeing account for an additional 309,000 recreation days.

4.25 Cultural Resources. The Missouri River was a natural highway and a focal point for occupation. Few intact archeological or historical human occupation sites probably remain within the flood plain portions of the corridor. This is a result of the numerous channel shifts which have occurred and are still occurring. The major portion of archeological and historical human occupation sites are probably located on the bluffs within and overlooking the corridor.

4.26 The earliest major historical documentations of the river are the journals kept by Lewis and Clark as they made their journey up the Missouri in 1804 and 1805 and returned in 1806. Information from the

Lewis and Clark journal indicates that the men camped on this particular reach of the river eight times in the process of their round trip. Six campsites were made during the period of 23 August through 31 August 1804 on the way up the river and two were made 1 and 2 September 1806 as they returned to St. Louis.

4.27 In their journals, Lewis and Clark described the surrounding countryside as they traveled upstream. They mention the rivers which flow into the Missouri and the bluffs, sandbars, islands, and wildlife. The landscape remains much today as it was then. Significant features are still identifiable. One feature mentioned in the Lewis and Clark journal, which was to become a local landmark, was the Ionia "volcano." The journal describes it as a "burning bank or bluff which was very high and had fire in it . . ." The location of this bluff was reported as opposite the Whitestone River, the present-day Vermillion River. The Indians of the area thought of this hill as being associated with the supernatural and regarded it with awe.

4.28 Thousands of river travelers and settlers saw the hill and wondered at the "burning bluffs." Most of them believed it was a volcano. During the 1860's, and 1870's the Ionia "volcano" attracted much attention, especially when increased subterranean activity followed the frequent floods on the Missouri River. High water caused chemicals in the hill to react and steam and sulfurous fumes rose from cracks in the hills. Local residents feared a volcanic eruption. On 15 November 1877, an earthquake in northeast Nebraska was thought to be an impending eruption of Ionia "volcano." Early in 1878, a raging flood on the Missouri severely damaged the small town of Ionia, from which the bluff got its name, and washed away a large section of the hill. The river now flows some distance from the base of the bluff, so it no longer releases steam and gases. The only remains of the town of Ionia, which was relocated up the bluff, are a cemetery and the foundation of a school. This is one of the several prominent features still identifiable.

4.29 Calumet Bluff, site of Gavins Point Dam, was the location of a Lewis and Clark campsite from 28 August through 31 August 1804, while they met with the Sioux Indians of this region. This bluff, too, was a well-known landmark. The exact location of other Lewis and Clark campsites along the river would be almost impossible to determine precisely, since the river channel has changed so much since 1804; nevertheless, approximate locations can be determined.

4.30 Indian traders and trappers followed soon after Lewis and Clark, and the era of steamboats on the Missouri began a few years later. By 1831, the steamers had traveled well beyond Gavins Point. It was in this year that the steamer Yellowstone reached Fort Pierre, South Dakota. Both side-wheelers and stern-wheelers traveled this portion of the river. Some became victims of the river either because of snags, ice, or fire; there were at least seven steamboat wrecks. By 1900, steamboat travel in the Missouri was essentially a thing of the past.

V. ENVIRONMENTAL EFFECTS

NATURAL VEGETATION

5.1 Selected Plan. Increased development of recreation facilities and public access will increase levels of public use and pressure on this resource. While it is anticipated that visitation levels would be controlled within the recovery capacity of the total resources, incremental adverse effects are unavoidable; for example, some breeding wildlife habitat will be disturbed because of the presence of humans. In addition, commitment of lands for recreation and access will preempt the option of habitat preservation and/or enhancement.

5.2 This alternative will also have the positive aspect of protecting major islands and woodlands. Backwater areas critical for wildlife and waterfowl habitat will be protected or preserved. Sandbar formation will continue, which would assure nesting habitat for the interior least tern, and contribute significantly to the usefulness of the river reach as a major spring and fall staging area for migratory waterfowl. Preservation of high bank woodlands will benefit the endangered bald eagle.

5.3 No Federal Action. The effects of no Federal action on natural vegetation would be significantly adverse. Most high-bank and many low-bank lands would be cleared for crop production or developed for recreational purposes. Those lands not cleared or developed would be lands highly susceptible to erosion. Thus, most, if not all, of the mature flood plain forest would virtually be eliminated in the corridor.

THE FISHERY

5.4 Selected Plan. This alternative will protect the warm-water fishery habitat of the river reach. Most deep holes, shallows, backwaters, side channels, and other aquatic habitat types would be maintained to benefit the river's populations of fish.

5.5 No Federal Action. A relatively high level of diversity of aquatic habitat would continue to exist if no Federal action is taken; however, some species of fish would decline in number, due to little emphasis being placed on fish habitat needs when controlling bank erosion.

RECREATIONAL RESOURCES

5.6 Selected Plan. Existing river access facilities operated by State and local government will be upgraded as necessary to permit all-weather use. Additional land will be acquired and sanitary, river access, and camping facilities will be constructed. Recreation development would support an additional 750,000 recreation days annually.

This increased regional tourism would provide some economic stimulation in the counties adjacent to the river. Tourists are expected to add \$5 million annually to the regional economy.

5.7 Maintenance requirements of all facilities in the recreation areas would increase. This burden would remain with the non-Federal agency. Indirectly, this increased demand for maintenance can affect maintenance of other recreation areas and rural roads that are the responsibility of the non-Federal agency by reducing the funds and manpower available for their maintenance.

5.8 No Federal Action. Recreation use in the Recreation Market Area (RMA) (those counties surrounding the 58-mile segment of the Missouri River being studied) has been increasing over the past years. Modest increases in the recreational use would be expected due to increasing population in the RMA. Most use would continue to occur on the developed Corps of Engineers' sites at Gavins Point Dam and Lewis and Clark Lake, as well as Nebraska's Ponca State Park. Continued use of this reach of the river is also anticipated by boaters coming up river from the Sioux City area. No future major recreation developments would likely be constructed under this alternative. By 1990, about 1,000,000 recreation-days use would be expected to occur annually.

CULTURAL RESOURCES

5.9 Selected Plan. Effects of the plan on cultural and historical resources would be mostly beneficial. The corridor directly affected by Federal action will be surveyed; all sites identified will be evaluated and protected and or mitigated as provided by law. Some resources may suffer some damage due to increased recreational use of the river corridor. Unknown, deeply buried sites may be impacted during construction; however, this impact would be kept to a minimum because construction would be halted immediately.

5.10 No Federal Action. Historic and archeological sites on private lands would not receive additional protection and would, therefore, be subject to degradation through erosion, agricultural activities, borrowing, and construction projects.

CONCLUSION

5.11 The selected plan is a plan with elements which will maintain or enhance man's environment in the long term. The plan will maintain a diverse natural vegetation, whereas the No Federal Action alternative would not; it will enhance important aquatic habitat, whereas the No Federal Action alternative would not; and it will protect significant cultural and historical resources, whereas the No Federal Action alternative would not. Since high bank preservation is likely to occur with either alternative, prime farmland would be preserved with or without the selected plan. Also, at the same time, the selected plan will provide for more public use of the natural resources the plan will preserve and protect.

VI. PUBLIC INVOLVEMENT

6.1 An important part of this study effort was to solicit and obtain public input. In pursuit of this goal, two public meetings were held. The first was held on 31 June 1976 in Pierre, South Dakota, and the second was held on 1 July 1976 in Yankton, South Dakota. Comments received during and after these meetings were generally supportive for the study of this reach of the Missouri River for possible inclusion in the National Wild and Scenic Rivers System. Verbatim transcripts of these comments are on file with the Corps of Engineers District Office in Omaha, Nebraska.

6.2 A Draft Environmental Statement entitled "Missouri River - South Dakota, Nebraska, North Dakota, Montana" was filed with CEQ on 18 February 1977 and was distributed to the following Federal, State, and local agencies, citizens, and citizens groups for their review and comment.

- FEDERAL AGENCIES

- Department of Health, Education and Welfare
- Department of Commerce
- Department of Housing and Urban Development
- Office of Economic Opportunity
- Federal Highway Administration
- Environmental Protection Agency
- Federal Energy Administration
- Federal Power Commission
- Rural Electrification Association
- Soil Conservation Service
- Department of Interior
 - Bureau of Indian Affairs
 - Bureau of Outdoor Recreation
 - Bureau of Reclamation
 - Fish and Wildlife Service
 - National Park Service
- National Water Resources Council
- Missouri River Basin Commission
 - Federal and State members
- National Advisory Council on Historic Preservation

- STATE AGENCIES

- Nebraska Office of State Planning
 - Game and Parks Commission
 - Historical Preservation Officer
 - Department of Environmental Control
 - Department of Water Resources

• STATE AGENCIES (Cont'd)

Natural Resources Commission
 Director of Extension
 South Dakota Bureau of Planning
 Department of Game, Fish, and Parks
 Energy Policy Council
 Public Utilities Commission
 Department of Environmental Protection
 Historical Preservation Officer
 Director of Extension
 North Dakota State Planning Agency
 State Game and Fish Department
 State Highway Department
 Historical Preservation Officer
 Outdoor Recreation Agency
 Director of Extension
 Montana Office of Budget and Planning
 Department of Fish and Game
 Department of Natural Resources and Conservation
 Public Service Commission
 Historical Preservation Officer
 Environmental Quality Council
 Director of Extension

• OTHERS

Affected Electrical Power Cooperatives
 South Dakota Rural Electric Association, Inc.-Pierre, SD
 Marshall Municipal Utilities-Marshall, MN
 Midwest Electric Consumers Association
 Missouri Basin System Group
 Municipal Power Agency-Sioux Falls, SD
 Rushmore Electric-Rapid City, SD
 United Power Association-Elk River, MN
 Valley City Municipal Utilities-Valley, ND
 County Commissioners of Missouri River Corridor Counties
 Mayors of Cities Bordering River in Study Reach
 Vermillion Chamber of Commerce
 Yankton Chamber of Commerce
 North Dakota Association of Soil Conservation Districts and
 River Bordering Districts
 South Dakota State Association of Conservation District and
 River Bordering Districts
 Montana Association of Conservation Districts and River
 Bordering Districts
 Nebraska Association of Resources Districts and River
 Bordering Districts
 East Dakota Conservancy Sub-Districts

• OTHERS (Cont'd)

Lower James Conservancy Sub-Districts
West River Conservancy Sub-Districts
Oahe Conservancy Sub-Districts
Blackhills Conservancy Sub-Districts
Gregory County Conservancy Sub-Districts
Fort Randall Conservancy Sub-Districts
South Dakota Water Development Association
South Dakota Great Lakes Association
North Dakota Wildlife Federation
South Dakota Wildlife Federation
Montana Wildlife Federation
Nebraska Wildlife Federation
Izaak Walton League
 Nebraska Division
North Dakota Natural Science Society
Augustana Research Institute
Nebraska Bass Chapter Federation
Sierra Club
Nebraska Council of Sportsmen
Wildlife Management Institute
Quality Environmental Council
National Wildlife Federation
National Audubon Society
Ducks Unlimited, Inc.
American Camping Association, Inc.
National Recreation and Park Association
Environmental Policy Center
Coalition on American Rivers
Battelle-Northwest Laboratories
Argonne National Laboratory
Los Alamos Scientific Laboratory
Energy Research Development Association
Dakota Environmental Council
Friends of Oahe, Inc.
SIMPCO
Gregory County Pumped-Storage Site Steering Committee
Honorable John E. Newton-Nebraska Supreme Court Judge
William Hyde-Wagner, SD
Kim Murphy-Sioux City, IA
Gerald Bachman-Omaha, NE
Bob Danko-Bend, OR

6.3 A Revised Draft Environmental Statement was prepared and filed with CEQ on 5 May 1978. Circulation of this document was made to governmental agency heads only. Comments on this statement that specifically pertain to the Missouri River below Gavins Point were received from the following:

- U.S. Department of Agriculture
- U.S. Department of the Interior
- U.S. Environmental Protection Agency
- State of South Dakota - Office of the Governor
- Nebraska Office of Planning and Programming
- Nebraska Game and Parks Commission
- Nebraska Department of Water Resources

Copies of the letters of comment from the above listed agencies are presented and discussed in appendix A.

6.4 The following agencies, groups, and individuals received a copy of this FEIS.

- FEDERAL AGENCIES

Department of Transportation
 Department of Health, Education, and Welfare
 Department of Commerce
 Department of Housing and Urban Development
 Environmental Protection Agency
 Federal Energy Regulatory Commission
 Federal Power Commission
 Soil Conservation Service
 Department of Interior
 Bureau of Mines
 Heritage, Conservation, and Recreation Service
 Bureau of Land Management
 Fish and Wildlife Service
 National Park Service
 Missouri River Basin Commission
 National Advisory Council on Historic Preservation

- STATE AGENCIES

Nebraska State Office of Planning and Programming
 Game and Parks Commission
 Historical Preservation Officer
 Department of Environmental Control
 Department of Water Resources
 Natural Resources Commission
 South Dakota, Office of the Governor
 Department of Game, Fish and Parks
 Board of Environmental Protection
 Historical Preservation Officer
 Department of Water and Natural Resources

• OTHERS

Lewis and Clark Natural Resources District
Lower Niobrara Natural Resources District
Missouri River Bank Stabilization Association
Siouxland Interstate Metropolitan Planning Council
National Wildlife Federation
Nebraska Wildlife Federation
South Dakota Wildlife Federation
Nebraska Chapter of the Sierra Club
Midwest Environmental Services
H. Paul Friesema - Evanston, IL
Robert Eidsmoe - Sioux City, IA
William Hyde - Wagner, SD

VIII. LIST OF PREPARERS

The following people were primarily responsible for preparing this Environmental Impact Statement.

<u>Name</u>	<u>Expertise</u>	<u>Experience</u>
Mr. Robert Nebel Study Biologist	Ecology	2 years, EIS Studies Omaha District
Mrs. Ann Welch Study Recreation Planner	Recreation Planning	3 years, Water Resource Studies, Omaha District
Ms. Judy Wood Study Archeologist	Archeology	3 years, Cultural Resources Studies, Omaha District
Mr. Richard Gorton EIS Reviewer	Sanitary Engineering	9 years, EIS Studies, Omaha District
Mr. Arvid Thomsen EIS Reviewer	Civil Engineering	15 years, Water Resources Studies, Omaha District

EXHIBIT I

Section 7 Consultation

Endangered Species Act of 1973, as Amended



United States Department of the Interior
FISH AND WILDLIFE SERVICE

MAILING ADDRESS:
Post Office Box 25486
Denver Federal Center
Denver, Colorado 80225

STREET LOCATION:
134 Union Blvd.
Lakewood, Colorado 80228

IN REPLY REFER TO:

FA/SE/HCRS--Mo. R.
Rec. Plan

JUN 15 1979

MEMORANDUM

To: Regional Director, Mid-Continent Region
Heritage Conservation and Recreation Service, Denver, Colorado

From: Regional Director, Region 6
Fish and Wildlife Service, Denver, Colorado

Subject: Section 7 Consultation, Endangered Species Act of
1973

This responds to your June 7 memorandum requesting Section 7 consultation on the draft management plan for the Missouri Recreational River between Gavins Point Dam, South Dakota, and Ponca State Park, Nebraska.

We have reviewed the plan and it is our biological opinion that actions described therein will not jeopardize the continued existence of any endangered or threatened species. If the objectives for natural resources, woodlands, and wildlife listed on pages 34, 38, 41, 42, and 43 are carried out, it will likely benefit the bald eagle and possibly the whooping crane.

The objectives of the plan include the protection of threatened and endangered species of flora and fauna, the protection and enhancement of woodlands, and the inventory and development of habitat management plans for threatened or endangered wildlife species. Under programs for the above objectives, timber cutting will be allowed only to prevent the spread of disease or insect infestations or to clean up burned areas, experimental methods of reforestation will be attempted, and a plan of erosion control to protect woodland areas where needed will be provided by the Corps of Engineers. In addition, raptor nest sites will be protected, and the establishment or improvement of wetlands will be included in the overall wildlife habitat management plan.



Save Energy and You Serve America!

Section 7(a) of the Act requires all Federal agencies, in consultation with the Secretary of the Interior, to "utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species." Therefore, in any acquisition of lands in fee or easement or in any erosion control plan, the protection of habitat for bald eagles should be a top priority in determining which areas to purchase or stabilize. The Heritage Conservation and Recreation Service and the Corps of Engineers should use their authorities to see that this is carried out for the benefit of endangered species.

Thank you for the opportunity to provide comments and for your concerns with endangered species. If the objectives or programs of the plan which are likely to benefit the species are changed or modified, consultation should be reinitiated.

James C. Selman



United States Department of the Interior
FISH AND WILDLIFE SERVICE

MAILING ADDRESS:
Post Office Box 25486
Denver Federal Center
Denver, Colorado 80225

STREET LOCATION:
134 Union Blvd.
Lakewood, Colorado 80228

IN REPLY REFER TO:

FA/SE/COE--Sect. 32
(6-4-80-F-75)

MAR 10 1980

Colonel V. D. Stipo
District Engineer
Omaha District U.S. Army Corps of Engineers
6014 U.S. Post Office and Courthouse
Omaha, Nebraska 68102

Dear Colonel Stipo:

This responds to your letter of December 11, 1979, requesting a biological opinion on the Section 32 Streambank Erosion Control Demonstration Program.

We agree with your assessment that the Section 32 Program will not affect the whooping crane (Grus americana) or the peregrine falcon (Falco peregrinus). We also agree that this program may affect the bald eagle (Haliaeetus leucocephalus).

BIOLOGICAL OPINION

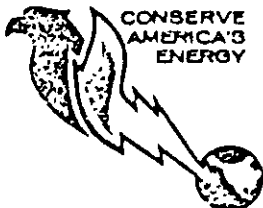
The Section 32 Streambank Erosion Control Demonstration Program is not likely to jeopardize the continued existence of the bald eagle or adversely modify its critical habitat.

PROJECT DESCRIPTION

This project consists of the development and demonstration of new methods and techniques of streambank erosion control on the Missouri River. A complete description of the program is found in the "Final Environmental Statement, Missouri River, South Dakota, Nebraska, North Dakota, Montana-Streambank Erosion Control."

BASIS OF OPINION

We agree with the assessment that the "Availability of food is probably the most important factor influencing the distribution of wintering bald eagles." We also concur in the conclusion that the braided channel, in many areas of the Missouri River, "may facilitate the stranding of fish and the opportunity for eagle fishing."



Save Energy and You Serve America!

The program, as it is currently planned, is not likely to affect the nature of the river channel and thus will not affect the availability of fish to the eagles. The location of good fishing spots may change but they are not expected to decrease. In addition, the eagles' alternate food sources, waterfowl and upland prey, will not be affected.

However, if the program should be expanded substantially, I believe that the very nature of the channel may be affected. The currently proposed erosion control measures will not affect the formation of sandbars or the tendency of the river to braid. However a large number of such projects could affect the sediment load of the river and this could affect the hydrology of the river. Therefore, if the program is changed, substantially increasing the number of erosion control projects, consultation should be reinitiated.

The accessibility of the food can also be affected. Bald eagles prefer large trees near the riverbank with lateral branches and a good view of the river and bankline for perching sites. Studies in South Dakota have shown that 86 percent of the eagles perch within 15 meters (m) of the bank and 58 percent perch within 5 m of the bank. Bank stabilization structures, such as a composite revetment or reinforced revetment, can leave long stretches of bankline where no suitable perch trees remain near the banks. This is especially true where haul roads used to deliver rock for the structures cause the clearing of additional trees and widen the distance from the stabilized bank to suitable perch trees.

Protective measures "a" through "c" will minimize the removal of near-bank trees. Near-bank trees are being lost to erosion without the projects; however, as the bank is eroded and trees on the bank are lost, other trees near or on the new bank provide suitable perching sites. These projects can reduce this continuing loss of flood plain forest and also be beneficial to eagles if trees on and near the bank are stabilized and protected rather than cleared due to construction or lost to erosion.

If construction work in many areas is extended into winter, a significant stretch of suitable wintering habitat may be impacted due to disturbance from construction. The displacement of eagles from specific sites is ameliorated by the eagles' high mobility. Bald eagles are rarely keyed into particular locations, with the exception of sites below dams, but rather search for ice-free areas where fishing is possible. These sites change from winter to winter and even within the same wintering season.

The combined displacement of bald eagles from the entire project area could have a significant adverse impact on their survival. This is especially important during times of limited food supply resulting from

extensive freeze-up. As long as the eagles are not precluded, by construction activities, from a substantial number of ice-free areas, their existence is not likely to be jeopardized. Protective measure "d" should prevent such an occurrence.

The Service believes that, as a secondary impact, bank stabilization may encourage conversion of woodland to agricultural land. Such conversions could cause the loss of diurnal perches, roosting areas, or possibly nests, depending on the project sites. In his 1979 master's thesis entitled, "Water Resource Project Effects on Land Use on River Habitat," Jack Mielke, University of Nebraska, found that woodland clearing was taking place in unstabilized areas as well as in stabilized areas.

Although no increase in conversion rates could be attributed to stabilization, Mielke recognized that, "the relatively short time since the works were installed may have biased the data." The report points out that the conversion of woodland to agricultural land is more a factor of agribusiness trends rather than bank stabilization. However, when such agribusiness trends occur, an existing stabilized streambank will certainly be more encouraging to woodland conversion than an eroding streambank.

The major influence of the stabilization may be on how close to the river the woodland is cleared. A landowner is not likely to incur the costs of clearing land he may expect to see washed away within his lifetime. A stabilized bank, however, may encourage clearing much closer to the bankline. How close to the riverbank an individual landowner would clear without bank stabilization would depend on several factors (rate of erosion, landowner perception of the problem, the change of future Federally financed bank stabilization, etc.) and is difficult to quantify.

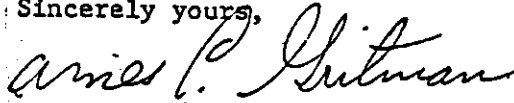
Protective measure "g" should reduce tree clearance by landowners. However, we still believe that the most effective protection would be for the Corps to obtain easements which will prevent conversion of wooded lands to other uses. These easements should include, at a minimum, the trees within 200 feet of the stabilized streambank. The Endangered Species Act states that "All other Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of the endangered species and threatened species listed pursuant to Section 4 of this Act." We believe that easements to conserve the bald eagle are authorized by the Endangered Species Act.

Besides food (availability and accessibility) and shelter (roost sites), nesting habitat is critical to the survival of the bald eagle. Protective measure "e" will prevent adverse impacts to nest sites.

As indicated by the assessment, coordination between the Corps and the Fish and Wildlife Service, on Section 32 projects, has been excellent. The procedures listed on page 52 of the assessment will ensure that such coordination continues to prevent any unforeseen problems on specific erosion control sites.

I commend you and your staff for your continued cooperation in conserving endangered species. If the Section 32 program changes substantially or new species are listed, please reinitiate consultation.

Sincerely yours,



Acting JAMES C. GRITMAN
Regional Director

EXHIBIT II

Cooperative Agreement
Between the
U.S. Department of the Interior
and the
U.S. Department of the Army
for
Implementation of Section 707
of
Public Law 95-625

Rec'd 2-8-80
B.

Cooperative Agreement
Between the
U.S. Department of the Interior
and the
U.S. Department of the Army
for
Implementation of Section 707
of
Public Law 95-625

The Secretary of the Interior, acting through the Assistant Secretary for Fish and Wildlife and Parks, and the Secretary of the Army, acting through the Chief of Engineers, herein set forth the terms and conditions of cooperative responsibility to be accomplished pursuant to Section 707 of Public Law 95-625 (92 Stat. 3528), an act amending the Wild and Scenic Rivers Act (16 U.S.C. 1271 et. seq.). The Wild and Scenic Rivers Act is hereinafter referred to as "The Act."

WHEREAS, The recreational segment of the Missouri River in Nebraska and South Dakota was added to the National Wild and Scenic Rivers System to preserve and protect and to make available its resources for public use as generally described in the document entitled, "Review Report for Water Resources Development, South Dakota, Nebraska, North Dakota, Montana," prepared by the Division Engineer, Missouri River Division, Corps of Engineers, dated August 1977.

NOW, THEREFORE, IT IS AGREED THAT:

I. THE SECRETARY OF THE INTERIOR, ACTING THROUGH THE ASSISTANT SECRETARY FOR FISH AND WILDLIFE AND PARKS, AND THE SECRETARY OF THE ARMY, ACTING THROUGH THE CHIEF OF ENGINEERS, JOINTLY WILL:

(A) Develop and implement detailed plans for acquisition of lands and interests in lands, development, protection and management of the designated river reach incorporating those recreation and bank stabilization aspects, real estate and other requirements necessary to carry out the provisions of the act;

(B) Establish criteria and priorities for river protection measures which are compatible with designation of the segment as a component of the National Wild and Scenic Rivers System;

(C) Establish criteria and procedures to permit access for such pumping and associated pipelines as may be necessary to secure an adequate supply of water for owners of land adjacent to the river;

(D) Confer on budget allocations required to carry out the purposes of the act; and

(E) Establish a conceptual theme for the design of recreational features and development.

II. THE SECRETARY OF THE INTERIOR, ACTING THROUGH THE ASSISTANT SECRETARY FOR FISH AND WILDLIFE AND PARKS, WILL:

(A) Administer the designated segment as a Recreational River under the provisions of the act;

(B) Initiate efforts to establish a Recreational River Advisory Group which may include members representing those organizations identified in section 3(a)(22) of the act and define the duties and responsibilities of the Recreational River Advisory Group;

(C) Upon request, provide technical assistance to the U.S. Army Corps of Engineers in those instances where the Department of the Interior has unique capability by virtue of law or special expertise required for planning and implementation of the act;

(D) Determine, upon notification by the Secretary of the Army (acting through the Chief of Engineers), or otherwise, if activities are occurring or threatening to occur along the designated river segment which constitute serious damage or threat to the values for which the segment was designated; and

(E) Submit budget requirements through normal Departmental channels.

III. THE SECRETARY OF THE ARMY, ACTING THROUGH THE CHIEF OF ENGINEERS, WILL:

(A) Submit budget requirements for project planning, acquisition of lands and interests in lands, development of interpretive facilities and features, and construction of recreational and stream-bank stabilization;

(B) Submit budget requirements for operations, maintenance and replacement of such features and facilities;

(C) Notify the representative of the Secretary of the Interior and other members of the Recreational River Advisory Group about activities that are occurring along the designated river segment which constitute a threat to the values for which the river was designated and to land and interests in land acquired by the United States, and make recommendations concerning the issuance of a determination by the Secretary of the Interior as provided for in Article II(b) of this Agreement; and

(D) Notify Interior of the congressional budget hearings on the Recreational River so that Interior will be able to testify.

IV. THE SECRETARY OF THE ARMY, ACTING THROUGH THE CHIEF OF ENGINEERS, SUBJECT TO APPROPRIATIONS WILL:

(A) Conduct or cause to be conducted during detailed planning and design for implementation of the Recreational River Management Plan (incorporated herein by reference), and in coordination with appropriate agencies of the Department of the Interior:

1. A survey to determine the sites of historical and archeological resources which may be located within the river corridor;

2. A visual resource analysis to identify any outstandingly remarkable scenic areas which should be protected as part of the Recreational River;

3. An inventory and assessment of wildlife resource values which should be protected and enhanced to maintain those qualities which led to designation of the segment; and

4. A mineral resource inventory and analysis for management of these resources.

(B) Determine the extent and location of streambank stabilization structures and other works necessary to control erosion and the legal interest in lands required for the construction and maintenance of such works;

(C) Further determine, prior to the initiation of construction (or the Federal assumption of maintenance), of any streambank stabilization structure, the extent of additional related lands or legal interests in lands within the same ownership which are required to protect and enhance the river in accordance with the purposes of the act;

(D) Condition the construction or maintenance of any streambank stabilization structure, other works necessary to control erosion, or of any recreational river feature, upon the availability to the United States of such land and interests in land in such ownership as is deemed necessary to carry out such construction and maintenance and to protect and enhance the river in accordance with the purposes of the act.

(E) Acquire in the name of the United States such additional lands and legal interests in lands required to carry out the river preservation and recreational purposes of the act in accordance with normal real estate practices of the Corps of Engineers, section 2(a)(22) of the act, and the requirements of Public Law 91-646;

(F) Design, construct, operate, and maintain the recreation and interpretive features in conformance with the Recreational River Management Plan;

(G) Design, construct, operate and maintain streambank stabilization and river preservation structures;

(H) Seek written cooperative agreements for State or local governmental participation as provided for by section 10(e) of the act; and

(I) Failing to negotiate adequate protection or willing cessation of activities which threaten the land or interests in land acquired by the United States or which threaten the values for which the river segment was designated, as determined by the Secretary of the Interior, exercise eminent domain or other appropriate remedy to prevent or terminate such adverse activities.

V. RENEGOTIATION OR TERMINATION

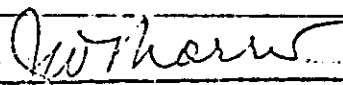
Either party may initiate renegotiation or termination of this agreement by 30 days written notice.

U.S. Department of the Interior

By 
Robert L. Herbst
Assistant Secretary for Fish and Wildlife and Parks

1/4/80
(Date)

U.S. Department of the Army

By 
J.W. Morris
Lieutenant General, USA
Chief of Engineers

2/1/81
(Date)

APPENDIX A
PUBLIC VIEWS AND RESPONSES

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STATE OF SOUTH DAKOTA

HARVEY WOLLMAN
GOVERNOR

August 7, 1978

EXECUTIVE OFFICE

PIERRE
57501

CORPS OF ENGINEERS RESPONSES

Lt. Gen. J. W. Morris, Chief
U. S. Army Corps of Engineers
1000 Independence Avenue, S. W.
Washington, D. C. 20314

Dear General Morris:

The Natural Resources Cabinet Subgroup, which is comprised of all the natural resources agencies in South Dakota state government, has reviewed the Corps of Engineers' "Umbrella Study" for its impacts on South Dakota. Based on this review, I have several comments on the study I would like to offer for your consideration. The comments pertain to the pumped storage facility, bank stabilization, fish rearing ponds and the national recreational river designation.

A-1

The proposed pumped storage hydroelectric generating facility on Lake Francis Case in Gregory County is acceptable to South Dakota if suitable mitigation measures are used to ameliorate adverse environmental impacts. If this facility is constructed, the Corps should install energy dissipaters and anti-erosion devices in the afterbay intake and discharge areas to reduce erosion, turbidity and other impacts on the aquatic ecosystem. As much wildlife habitat as possible should be developed around the forebay and other project facilities.

South Dakota also supports the bank stabilization of active erosion sites below Oahe, Fort Randall and Gavins Point Dams if the structures are properly constructed and maintained. The Corps should consider absorbing the long-term maintenance costs of the stabilization program because the operation of the Missouri mainstem reservoirs is directly responsible for accentuating the natural process of bank erosion.

As discussed in the study, the construction of the fish rearing ponds at seven sites on Lake Oahe and five sites along Lake Francis Case should be the subject of further discussions between the Corps and the Department of Wildlife, Parks and Forestry. I approve of the concept. The potential for such ponds should also be evaluated for all other mainstem reservoirs.

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Planning and design of all future stabilization structures in the recreational river will be fully coordinated with State and Federal agencies. Maintenance of the structures will be the responsibility of the Corps of Engineers, subject to appropriations. (See Section IV. G. of Exhibit II.)

Lt. Gen. J. W. Morris
August 7, 1978
Page Two

I also support the concept of designating the Missouri River from Gavins Point to Ponca, Nebraska as a National Recreational River if the easements will not be too restrictive and condemnation of land and easements are minimal. If the designation from Gavins Point to Ponca proves to be beneficial to South Dakotans, the reach from Fort Randall Dam to the headwaters of Lake Lewis and Clark should be studied for a similar designation.

I appreciate the opportunity to comment on the Umbrella Study. I think the proposals outlined will be beneficial to South Dakota and the nation if my comments are incorporated into the final plans.

With every best wish, I remain

Sincerely,



HARVEY WOLLMAN
GOVERNOR

HW:jrd

cc: Natural Resources Cabinet Subgroup

CORPS OF ENGINEERS RESPONSES

2 The Missouri River from Gavins Point to Ponca, Nebraska was designated a National Recreational River on 10 November 1978 by Section 707 of Public Law 95-625. Section II of the GDM being circulated with this FEIS addresses your concerns regarding easements and condemnation of land. The Missouri River from Fort Randall Dam to the headwaters of Lewis and Clark Lake was recommended for inclusion in a State or National wild and scenic river system in the Missouri River Basin Framework Study report published in December 1971 by the Missouri River Basin Interagency Committee.

3 Acknowledged.



OFFICE
OF
PLANNING
AND
PROGRAMMING

BOX 94601 · STATE CAPITOL · LINCOLN, NEBRASKA · 68509 · (402) 471-2414

Governor J. James Exon
State Planning Officer

Jon H. Oberg
Director

CORPS OF ENGINEERS RESPONSES

June 29, 1978

Lieutenant General J. W. Morris
Chief of Engineers
Department of the Army
Washington, D. C. 20314

Dear General Morris:

Under the provisions of OMB Circular A-95, this agency has completed the clearinghouse review of the revised Draft Environmental Statement for the Missouri River "Umbrella Study."

The proposed actions do not appear to conflict with any state level comprehensive plans and does not represent a duplication in the expenditure of state or federal funds.

This agency requests a copy of the final environmental statement when it becomes available. Comments from the Game and Parks Commission and the Department of Water Resources are enclosed for your review and information.

Sincerely

Warren G. White
Warren G. White
Natural Resources Coordinator

WGW:np
Enclosures
cc: Bill Hoppner
Dayle Williamson
Del Whiteley
John Neuberger

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Acknowledged.

A-3

T-10

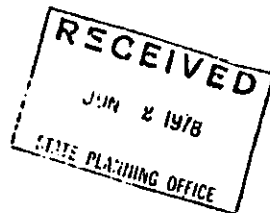


Nebraska Game and Parks Commission

2200 North 33rd Street / P.O. Box 30370 / Lincoln, Nebraska 68503

May 31, 1978

Ms. Neoma Parks, Project Review Coordinator
State Office Of Planning And Programming
Room 1319, State Capitol
P.O. Box 94601
Lincoln, Nebraska 68509



RE: SAI No. 78 05 02 - Umbrella Study

Dear Ms. Parks:

As indicated in the Coordination Section of the Report our agency has been consulted throughout the study period. The only significant deviation from information previously provided is the finding that the stream bank erosion control feature will be carried out under the Section 32 Demonstration program without phase I study and with a Final Environment Impact for this action based upon comments submitted on the Draft E.I.S. for the Umbrella Study. Our comments on the Draft EIS were based upon the indicated approach as shown in the Corps' May 28 Announcement for a series of public meetings in which it is stated:

"The area between Gavins Point Dam and the head of the existing stabilization works has an erosion problem; however, this reach has the potential for a multiple purpose solution in which bank stabilization is only one aspect. Consequently, it is treated as one of several considerations discussed under the topic "Recreation River."

Upon learning of this change, the Missouri River-Fort Randall Dam to Sioux City Erosion Control Task Force assumed leadership for developing legislation that would provide for the multiple-purpose approach. Specific provisions of this legislation includes: (1) designation of the Missouri River between Gavins Point Dam and Ponca State Park as a Recreation River under the National Wild and Scenic Rivers Act; (2) provisions for installation, future operation and maintenance of needed Streambank erosion control measures as planned under the Streambank Erosion Control and Demonstration Act (Section 32, Water Resources Development Act of 1974 and (3) establishment of what is termed a Recreation River Management Group, which would have essentially the same membership and function as the Erosion Control Task Force. This legislation which is an amendment to H.R. 12536 has been introduced and has been approved by the House Interior Committee.

CORPS OF ENGINEERS RESPONSES

- 1 The three provisions discussed have now been made into law by Section 707 of Public Law 95-625.

Ms. Neoma Parks
Page 2
May 31, 1978

Point (3) of Page 1 was included to assure appropriate recognition of the concerns of the diverse interests represented during the detailed planning implementation and operation phases. We would suggest an equal need exists for this provision under the Corps' adopted alternative to cover unforeseen consequences if the Congress does not act favorably on the multiple-purpose approach. The Corps recognizes and in fact terms the erosion control measures being installed as "... innovative and unproven techniques ...", page E-25 Appendix 1. Therefore, it appears desirable that they indicate their intent as to future monitoring of installed erosion control measures as well as the future role of the Task Force in site selection, design and operation of the measures.

The following discussion is contained on page B-68 Appendix 1, regarding endangered mammal species:

"The black - footed ferret has been sighted in all four states of the study area. Little is known about this species, however, there does seem to be a relationship between black - footed ferrets and prairie dog towns for food and shelter. Therefore, all prairie dog towns should be considered as possible ferret locations even if these "towns" occur in marginal habitat such as flood plains."

We concur with the last sentence but suggest that the second sentence may be misleading. We acknowledge that little is known so far as numbers and specific locations of remaining ferrets, however, a positive relationship with prairie dog towns has been established.

Very truly yours,


Delvin M. Whiteley, Chief
Planning and Programming Division

DM:sos

cc: Bill Bailey
Ken Johnson
Bob Thomas

CORPS OF ENGINEERS RESPONSES

1 On 10 November 1978, Congress acted favorably on the multipurpose approach and designated the Missouri River reach from Gavins Point to Ponca, Nebraska a component of the National wild and scenic rivers system. Sections VII and XI of the GDM being circulated with this FEIS address your concerns regarding monitoring of installed erosion control measures and the future role of the Recreational River Advisory Group in site selection, design, and operation of the measures

3 Acknowledged. Our second sentence may have been misleading.

Date May 31, 1978

INTER-OFFICE CORRESPONDENCE

CORPS OF ENGINEERS RESPONSES

From John W. Neuberger, Director *John*

To Jon Oberg, Director - State Office of Planning and Programming

Subject Review of Revised Draft EIS on Corps of Engineer's Missouri River Umbrella Study

The revised draft appears to adequately respond to the questions, concerns and issues raised by Nebraska State agencies, Natural Resources Districts and other interested groups and individuals.

We have no further comment on the revised draft and have not given priority to reviewing the three appendices referred to as technical reports.

I was not able to find comments from the Nebraska Natural Resources Commission and would like to know their views and position on the Review Report. For instance, have they acted to adopt the features and facilities within Nebraska as a part of their State Water Plan? Whatever correspondence or information you have would be appreciated.

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Acknowledged.

JWZ:bw

Attachment: Draft



DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY
WASHINGTON, D. C. 20250

CORPS OF ENGINEERS RESPONSES

July 31 1978

Lieutenant General J. W. Morris
Chief of Engineers
Office of the Chief of Engineers
Army Corps of Engineers
U.S. Department of the Army
Washington, D.C. 20314

Dear General Morris:

This is in reply to Colonel James N. Ellis' letter of April 25, 1978. We have reviewed the Corps of Engineers report, revised draft environmental impact statement and other pertinent reports on the Missouri River, South Dakota, Nebraska, North Dakota, and Montana. They recommend appropriation of \$2,500,000 for advanced engineering and design of additional hydroelectric development at Fort Peck and Garrison Dams plus construction of a pump storage hydroelectric plant at Francis Case Lake in South Dakota. The plan also includes streambank stabilization works at 30 active erosion sites along the Missouri River, 12 fish-rearing ponds, and designating approximately 60 miles of the Missouri River as a National Recreation River.

All of these features except the streambank stabilization works show benefits to exceed costs when calculated using an interest rate of 6 3/8 percent. It is noted that the Board of Engineers for Rivers and Harbors recommend excluding streambank stabilization works from this report. Should it remain in the report, the document would be strengthened by including benefits that can be expected from such works.

Although not specifically mentioned, the increase in hydroelectric power generation will help conserve nonrenewable fossil fuels. The reregulation reservoir will also provide flood control at the level below the dam thereby improving streambank stability and reliability of irrigation pumping plants.

Some rewording is needed regarding the statement that remaining woodland is on very sandy soil which is not usually regarded as good quality cropland (volume 1 of 3 review report, page 65). The soil is very sandy and is not regarded as high quality cropland for dryland farming; however, it does respond very well to irrigation when properly managed.

1 The benefits that can be expected from streambank stabilization works are discussed in detail in the Streambank Erosion Control Final Environmental Statement and throughout the GDM that is being circulated with this FEIS.

2 Acknowledged. See our next comment.

A-7

Carl H.

CORPS OF ENGINEERS RESPONSES

Lieutenant General J. W. Morris

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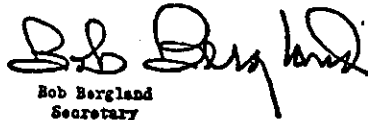
The effects of proposed plan elements should clearly address prime cropland. Maps used in the reports indicate prime cropland will not be involved; however, this should be clarified in the report.

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This proposed project has no apparent conflicts with the U.S. Department of Agriculture projects or programs.

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Sincerely,


Bob Bergland
Secretary

3 Cropland along the recreational river is very sandy; however it does respond very well to irrigation when properly managed. Development of the recreational river will protect most of this cropland from serious streambank erosion. The amount of protection, however, will be subject to appropriations.

4 Acknowledged.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
1880 LINCOLN STREET
DENVER, COLORADO 80202

CORPS OF ENGINEERS RESPONSES

Ref: BN-EE

September 20, 1978

J. W. Morris, Lieutenant General
U.S.A.
Chief of Engineers
Department of the Army
Washington, D. C. 20314

Dear General Morris:

EPA Regional Offices VII and VIII have reviewed the revised draft statement for Missouri River: South Dakota, Nebraska, North Dakota and Montana. We appreciated the opportunity to discuss these proposals with Corps staff and other offices in a recent field trip. Our detailed comments are attached. Our major concerns are the following:

1. The planning used in this "Umbrella Study" did not go far enough in its evaluation of problems and potential solutions. For example, certain actions along the river stretch from Gavens Point to Ponca Park have been taken with a possible recreational river designation in mind. However, actions are being proposed on other reaches of the river with no apparent consideration given to their potential eligibility for recreational river designation. The Corps should work with the Departments of Interior and Agriculture to arrange an immediate study of other potentially eligible river stretches under the Wild and Scenic Rivers Act.

2. We think some of the proposed hydroelectric modifications may be premature at this time. We have no objection to the Gregory County pumped storage facility provided certain design features are included. The added turbines and reregulation dams at Ft. Peck and Garrison dams are of concern. In view of the critical environmental tradeoffs for the stretch of free-flowing Missouri River between Garrison Dam to Oahe Reservoir, no irreversible construction should be made until the opportunities for potential recreational river designation have been assessed and adequate wildlife habitat mitigation is assured. Bank stabilization efforts along this stretch should be designed and constructed with such recreational river possibilities in mind.

3. Bank stabilization and navigation considerations were not adequately addressed in this revised statement. Under the "soft" bank stabilization demonstration efforts, your Agency should be developing criteria and a study approach to evaluate the effectiveness of these

All other free flowing reaches of the Missouri River have been recommended for inclusion in a State or National wild and scenic river system by the Missouri River Basin Interagency Committee in their December 1971 Missouri River Basin Framework Study report. Further study of these river reaches for designation under the Wild and Scenic Rivers Act must be initiated by the Department of the Interior in accordance with Section 4 of the Act. Such further study has not been initiated to date.

Bank stabilization has been more thoroughly addressed in the Streambank Erosion Control Final Environmental Statement. All of the bank stabilization measures constructed under Section 32 are being monitored for effectiveness, including aquatic and terrestrial impacts.

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Incl 3

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devices before a full-fledged program is instituted. A stronger commitment to correcting any untoward environmental impacts from these stabilization structures is needed.

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Based on EPA's system of rating EIS's under its review, we have rated this document as ER-2. This means that we have environmental reservations about various features in this study proposal.

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Acknowledged.

We will be happy to discuss our concerns with you. Please contact Mike Gansecki of my staff at (FTS 327-4831) or Tim Kubiak of Region VII at (758-2921) for further assistance.

Sincerely yours,


Alan Marson
Regional Administrator

Enclosure

A-10

Detailed Comments of the U.S. Environmental
Protection Agency on the Revised Draft EIS: Missouri
River - South Dakota, Nebraska, North Dakota, Montana

The Region VII and VIII Offices of EPA have reviewed the revised draft EIS and accompanying reports of the U.S. Army Corps of Engineers entitled the Missouri River - South Dakota, Nebraska, North Dakota, Montana. Because the proposals in the revised draft EIS are identical to that in the original draft (with the exception of the hydroelectric reregulation structures), most of the comments we provided in the EPA letter from John A. Green dated July 13, 1977 are still relevant.

GENERAL COMMENTS

1. Procedure

According to information in the revised draft EIS and elsewhere a portion of the proposed actions identified under the overall Umbrella Study and Draft EIS were covered in another final EIS. The proposed actions consist of some streambank erosion control projects authorized under Section 32 of the Streambank Erosion Control & Demonstration Act. We were informed that this final EIS was submitted to EPA Headquarters on June 16, 1978. Region VII and Region VIII EPA offices received copies of this final EIS during the first week of August. It is EPA's position that this EIS was not correctly filed and must be re-filed with EPA. Our Washington office that handles incoming EIS's has assigned the date of receipt by EPA of this final EIS as July 31, 1978. This would be the date of notification in the Federal Register.

2. The Planning Process

As was pointed out in our July 13, 1977 comments, the planning process used in this "Umbrella Study" did not go far enough in its evaluations of problems and potential solutions. While the Corps must of course follow through on expressed Congressional concerns, the Corps also has a great deal of administrative latitude to consider other actions. The National Environmental Policy Act encourages consideration of options available to the government as a whole.

We are most concerned about the lack of comprehensive and systematic planning consideration for the other free-flowing reaches of the Missouri River affected by Umbrella Study proposals. The reach from Gavins Point

4 | 4 | Acknowledged.

5 | 5 | It is the Corps of Engineers position that the Streambank Erosion Control Final Environmental Statement does not require re-filing. The 30-day review period was adjusted by EPA Headquarters to accommodate your late receipt of the Statement. The 7 August 1978 notice in the Federal Register indicated that the 30-day review period would expire on 30 August 1978.

6 | 6 | Acknowledged.

Dam to Ponca Park has received special attention because of the study effort by the USDA and Interior over potential recreation river designation. Bank stabilization structures, flow patterns, and riverbank land uses are being discussed from the perspective of compatibility with the possible Wild and Scenic River status.

We are concerned about the other free-flowing reaches such as between Garrison Dam and Oahe Reservoir, or between Ft. Peck and Garrison Dam. These reaches have suffered in some cases from operating effects of the mainstem dams, and stabilization efforts that have never been defined with recreation or fish and wildlife protection uses in mind. As the principal Federal operating agency on the Missouri River as well as the present proponent for major changes to the river regime and bank conditions, the Corps of Engineers should be the initiator of proposals to consider these reaches of free-flowing Missouri River under the Wild and Scenic Rivers Act. It is recognized that the Department of Interior and Agriculture have sole responsibility to carry out such studies. The Corps should take the initiative to work with these Departments to arrange immediate study of other potentially eligible stretches under the Wild and Scenic Rivers Act.

Without any guidance as to future recreation uses of these stretches of river, it may be premature to construct additional irreversible... features such as reregulation structures and extensive "hard" stabilization structures. There is a need to construct certain bank stabilization features, but even those need to be better defined in terms of other long-range public uses of the River.

The stretch of Missouri River from Garrison Dam to Oahe Reservoir is most critically affected at this time. Various stabilization structures are in place, under construction or imminent. The proposed reregulation structure would cut the length of the last remaining free-flowing North Dakota Missouri River segment by 12%. This stretch of river deserves early consideration for Wild and Scenic River status.

We recommend that no further hydroelectric structures be put in place until it is determined that such devices would be compatible with possible recreation river designation or else that the river segments level have been considered by DOI and USDA under their Wild and Scenic River Act Authorization. Any future bank stabilization activities should be developed for compatibility with potential recreation river designation.

From a planning perspective, the Umbrella Study did not seriously consider navigation alternatives. Apparently the unprofitability of the present Missouri River operations mentioned in our July 13, 1977 comments has no bearing on decisions about future or further navigation on

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7 Refer to response #1.

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the Upper Missouri. We recognize that Congress intended the Corps to study further navigation possibilities upriver of Sioux City, but it appears that events have overtaken this declaration. For one, interest by the States of South Dakota and Nebraska in protecting the Yankton - Sioux City reach for recreation use makes navigation channelization incompatible. The logical question to ask in such a planning effort is whether overall uses of the Missouri River system might be better served thru a gradual phase out of navigation. What is really needed is a critical and candid evaluation of whether Missouri River navigation is still a reasonable use to pursue. Priorities for use on the river are obviously changing, and perhaps the Corps needs to recommend a more recent perspective to Congress.

Other aspects of this planning effort which are not adequate include the hydroelectric proposals and bank stabilization measures. They are discussed separately below.

3. Hydroelectric Facilities and Power Needs

In our July 13 comments, we identified the need for a discussion about the role envisaged for the Missouri Main Stem Reservoir system in the larger public-private MARCA power net. Although the Umbrella Report mentions briefly the total power output of the main stem dams vs the present and projected power needs in the MARCA region, the full implications of the use of these dams is not made clear.

The main-stem dams could be operated ideally in two modes - run with uniform daily flow thru the turbine in a base-load mode or to meet peaking capacity needs by maximizing flows during portions of the day when power demands are greatest. It is recognized that a hydroelectric facility is more flexible than a fossil-fuel electric steam generation plant in its ability to provide peaking power.

There is a price paid for using the hydroelectric facilities in the peaking mode, however. Generally, the plant factor is considerably reduced over the situation where these facilities were used for base-load operation. In a sense, the cost-effectiveness is also reduced since more purchased capacity is used a lower percentage of the time.

The main-stem reservoir units have been used more and more frequently as peak demand suppliers. In a sense, this is a subsidy to those private electric generators who can use their base-load facilities more efficiently.

The more critical factor appears to be the stream flow pattern effect in going to peaking power in the main-stem reservoirs. Were the relatively constant base-load flows passed thru the dam turbines on a daily basis, the river stage fluctuations would be minimal. Only gradual changes in flow over time from variable upstream flows, reservoir filling requirements,

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Acknowledged.

and downstream requirements would affect stage height. It appears that the decision to operate the Missouri River hydroelectric system in the peaking power mode is the only way to provide for many of the mitigating features required in the Umbagog study. The erosion values, fish and wildlife effects, and perhaps streambank erosion are influenced by these daily river stage variations.

One alternative to the proposed peaking power additions (with or without reregulation features) is to operate the turbines on a relatively minimal daily flow regulation. In the North Dakota free-flowing stretch, this may be the only reasonable alternative to using up another sizeable portion of free-flowing river with a reregulation structure.

It appears that the reregulation structures used in the peaking mode could minimize the stage fluctuations on those downstream free-flowing river stretches. The question needs to be asked whether the marginal benefit of a peaking mode (at a specific site) is worth the destruction of that free-flowing river. The free-flowing river required for the reregulation facilities. This is a difficult environmental/national economic development choice to make. Such important choices for the future need to be clearly brought to light.

Your own report projects the relative contribution of mainstem power to total MARCA power to drop from the present 15% to about 5% by 1995 assuming no new additions on the mainstem system. However, there are projections of a significant increase in mainstem peaking power primarily thru the use of pumpback storage facilities like the one proposed for Gregory County. It appears that the baseload generating capacity must be met by the use of coal or uranium fuel alternatives. It is only the question to what extent the mainstem system can be used for further pump-back storage for peaking demand in the future that is at issue when looking at overall demand. The hydropower additions at Ft. Peck and Garrison will contribute only a minor amount.

A summary of our basic position on the proposed hydroelectric facilities is as follows:

- a. We have no objection to the Gregory County pumped storage facility provided that proper mitigation measures are taken to avoid entrainment of fish in the forebay environment. Water quality conditions are not degraded in Lake Francis Case. At this point in time, we believe that this can reasonably be done.
- b. We think a moratorium on the reregulation structures and added hydropower facilities is warranted until a better overall comprehensive plan for management of the free-flowing Missouri River below Garrison Dam to Lake Oahe can be developed. This can best be

done by encouraging USDI and USDA to evaluate this stretch under their Wild and Scenic River Act authorities. Such a plan should also provide adequate wildlife habitat along the river. In the event that such wildlife losses cannot be avoided, the alternatives of reduced, or no present peaking power arrangements should be evaluated.

c. We think that a similar evaluation should be done for the Ft. Peck to Lake Sakakawea stretch. At least a minimal evaluation should be made to determine whether the proposed reregulation/peaking power addition would preclude future recreation river status, in the event it is decided to proceed with such facilities at Ft. Peck. We prefer a reregulation structure which has the least environmental impact on paddlefish habitat, as defined by the U.S. Fish and Wildlife Service and the Montana Department of Fish and Game.

d. Other stretches of free flowing Missouri River in the study area should also be considered for future status under the Wild and Scenic River Act authorities.

4. Streambank Erosion Control Activities

Since certain streambank erosion control activities are considered in a separate final EIS, we will confine our review to some general points about the bank stabilization efforts.

EPA recognizes the severity of the problem of eroding areas. Valuable high bank forested areas and croplands can be lost in a relatively short period of time. With the river now so controlled, there is no opportunity for creation of new high banks on these stretches.

At the same time, the knowledge that flooding will not occur on these high bank areas makes them more desirable for farming. We did have the opportunity to see sizeable areas of high bank forest being levelled for farmland. If the recreation river is to be successful and if wildlife areas are to be protected, most of the remaining floodplain forest must be maintained. We understand that part of the recreation river proposal involves agreements with farmers to maintain strips of forest along the river. We concur in this approach. The Corps should also consider acquisition of these areas in some cases.

We are concerned that the promising but still experimental program for "soft" bank stabilization techniques in the area below Gavins Point Dam may be treated as an operational program. There are still a number of unknowns as to the long-term success of these efforts, for example, in the amount of additional re-entry needed at stabilization, and the overall amount of stabilization that will be needed to protect the high banks.

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Your comments are noted. The Corps will pursue acquisition of woodlands only from willing sellers.

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We do not question the mandate to install certain structures under the Section 32 Streambank Demonstration program. We think that a better definition is needed of the objectives and study methods to be used to analyze the effectiveness of these various bank stabilization techniques. Such an evaluation should culminate in a report on the techniques, that other agencies could review.

Another concern we have is whether structures such as that under construction at Mulberry Point are compatible with recreational river designation. We agree that the techniques we observed along the banks were relatively unobtrusive and of minimal impact to the overall riverine environment. We are more concerned with those types of structures placed in the river channel that are expected to have an overall effect on flow patterns, and sediment deposition. It seems that there is a greater potential for environmental change of an indeterminate kind with this type of structure. We recommend that those agencies concerned with recreation river evaluation be consulted as to the compatibility of these type of structures with the proposed designation.

In the past the Corps of Engineers has assured these agencies that these structures could be modified if the environmental effects are adverse. EPA was recently informed at a meeting on Kansas River stabilization activities that no funding has been allotted for repair of environmental damages occasioned by bank stabilization projects. We would like assurances from your agency that such funding would be available if environmental effects were determined to be adverse. We also think that the criteria and method for evaluating these structures be more clearly defined.

It has also come to our attention that a proposal put before Congress to designate the Gavins Point to Ponca Park reach as a National Recreation River also includes site specific bank stabilization authorizations. Following the recreational river authorization a one-year study will be made on the structures to be used.

It is our understanding from discussions with Corps staff that the Section 32 demonstration structures will proceed during the one year study period. We suggest that Section 32 activities be held in abeyance during the study period. Should the recreational river bill not pass, a more detailed evaluation of the Section 32 program is needed. The program appears to be a full fledged stabilization program utilizing "soft structural techniques."

Finally, as we have already mentioned, we are concerned that extensive bank stabilization efforts on other reaches of the free-flowing Missouri River may prejudice their possibilities for future recreational river status. We would like a better evaluation of the type of structures in place, under construction or proposed for construction on these reaches. Such structures should be evaluated with future recreational uses of the river in mind.

Section 32 requires that a report be prepared and submitted to Congress on the results of the program. The report will include the recommendations of the Secretary of the Army on means for the prevention and correction of streambank erosion. To meet this requirement, the Corps of Engineers has developed a comprehensive monitoring and evaluation program. At the end of the demonstration period, the District Engineer will prepare a report summarizing the overall results of the demonstration work undertaken in his District; the report will include individual, site specific performance appendices. Also included will be an appendix prepared by the U.S. Fish and Wildlife Service on the fish and wildlife impacts and it will include their recommendations for any mitigation needs.

These comments are actually no longer applicable due to the fact that the recreational river bill did pass. All new stabilization work will be designed, constructed, monitored, and maintained in accordance with Section 707 of Public Law 95-625. Also, all existing stabilization work will be modified, if necessary, to comply with this legislation.

Refer to response #1.

A-16

5. Other Commentsa. Water Quality

Designation of the Missouri River below Gavins Point as a National Recreation River under the Wild and Scenic Rivers Act could prove beneficial for water quality if the States of South Dakota and Nebraska designate the reach as "Outstanding National Resource Waters" in their respective water quality standards. This would commit the states to maintaining the quality of the water (no adverse changes). Long-term consequences of increased irrigation in the upper basin do suggest, at a minimum, that dissolved solids below Sioux City will increase by about 50-100 percent as ultimate irrigation depletions are attained. A more detailed analysis of nonpoint irrigation return flows affecting both water quality in the recreational reach below Gavins Point Dam and public water supply below the recreational reach will be needed in the future.

13 13 | Acknowledged.

b. Economic Analysis

We have had some trouble understanding the method of economic evaluation of the benefits/costs for hydroelectric additions used in this report. The method used here of assessing benefits to these structures involves assigning the private capital cost of development. The costs of the project in turn are based on government-financed payment rates. It appears that the B/C ratio largely reflects the difference in the private vs public investment and not a reflection of the value of the proposed project. Under an assumption that any government-financed construction would have a favorable B/C ratio. We note that even the Federal Power Commission had reservations about this approach (Appendix 3, page 5). We would appreciate a clearer explanation why this method was used. It would appear more realistic to evaluate projects benefits in terms of the actual power benefits produced vs. costs to a private developer.

NOT APPLICABLE



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

CORPS OF ENGINEERS RESPONSES

PEP ER-78/372

5 September 1978

Lieutenant General J. W. Morris
Chief of Engineers
Department of the Army
Washington, D. C. 20314

Dear General Morris:

Thank you for the letter of April 25, 1978, requesting our views and comments on a proposed report and draft environmental statement for work on the Missouri River, South Dakota, Nebraska, North Dakota and Montana. The Department has completed its review of these documents and wishes to provide some preliminary observations followed by our comments on your proposed report and draft environmental statement.

Section 32 of the Water Resources Development Act of 1974 authorized the Corps of Engineers to establish a National streambank erosion control demonstration program. The purpose of this legislation was to:

- 1) evaluate the extent of streambank erosion on navigable rivers and their tributaries;
- 2) develop new methods and techniques for streambank protection, research on soil stability and the identification of the causes of this erosion;
- 3) provide a report to the Congress on the results of the demonstration program studies and the recommendations of the Secretary of the Army on the methods to use in preventing and correcting streambank erosion; and
- 4) undertake streambank erosion control demonstration projects in connection with this study effort.

As part of the National program authorized by this 1974 Act the Corps was authorized to construct demonstration projects in the Missouri River between Fort Randall, South Dakota and Sioux City, Iowa and between Garrison and Oahe Dams. The

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purpose of the demonstration program was to develop and test new methods and techniques for streambank erosion control on the Missouri River. The Corps selected 15 sites for this demonstration program on the Missouri River, and in 1976 the Act was amended to add 20 additional sites. Three other sites were designated by Congress in the 1978 appropriations bill. The report of the District Engineer for the Missouri River recommended the study of 29 additional sites.

A demonstration program having 67 sites planned for construction appears to be a major streambank erosion control program, yet the legislative thrust was to develop new methods and techniques for streambank erosion. While we have no objection to developing improved solutions for such work, we do express concern as to the size of the program now contemplated and how this program will remain consistent with the spirit and intent of the authorizing legislation. We assume that program implementation will be phased so that the knowledge gained in each phase can be used in the successive phases. Further, this also implies that pre and post construction evaluations would be necessary. We would appreciate some clarification on this point, since the work can have a significant impact on our program areas of interest.

On April 25, 1978, your office requested our views and comments on a report and revised draft environmental statement for the Missouri River water resource development plan which is being recommended to Congress for phase 1 planning. The work being proposed for further planning includes increased power generation at two main stem reservoirs, a new pumped storage power project, streambank erosion control measures, building fish rearing ponds and designating a part of the Missouri River as an addition to the National Recreation River system. While this review was underway, your office determined that streambank erosion control on the Missouri River was already authorized by Congress. Since further authorization was deemed unnecessary, the Corps of Engineers prepared and filed a final environmental statement for streambank erosion control for the Missouri River on June 16, 1978. A Federal Register Notice of August 7, 1978 extended the review period until August 30, 1978.

We must challenge the procedure employed by the Corps of Engineers, since this erosion control program has not been fully coordinated with this Department to assess the program's effect on our programs and missions, and seek mitigation where it is deemed necessary. Further, issuance of a final environmental

We realize that the language of the Act talked of a demonstration program. The Department of the Interior should realize by now, however, that Congress' appropriations and Amendments to the Act have increased the original scope beyond that of a simple demonstration. The knowledge gained in the continual monitoring and evaluation program, outlined in Appendix B of the Streambank Erosion Control Final Environmental Statement, is being utilized in the continuing demonstration program.

The Corps of Engineers received informal concurrence from CEQ on the manner in which the Streambank Erosion Control Final Environmental Statement was filed. The Revised DEIS was filed 5 May 1978. The Streambank Erosion Control Final Environmental Statement was filed 31 July 1978. This time lapse exceeds the mandatory minimum review period of 45 days.

statement before the review period for the draft statement is completed fails to provide any opportunity for input into the final from those who may have jurisdiction and/or special expertise. This does not appear to be consistent with either the spirit or intent of NEPA.

In light of the foregoing circumstances, this Department would like an assurance that we be given full opportunity to review the pre and post construction studies and that full consideration would be given to any subsequent recommendations we would make for design modification and/or mitigation to protect our program areas of interest. We further request that our interested field offices be given the opportunity to participate in the planning effort in any other river basin where streambank erosion control studies are undertaken under the 1974 Act authority. For the streambank erosion control planned for the Missouri Basin, we also recommend that suitable language be set forth in your report that would authorize mitigation measures, should subsequent study show it to be warranted.

Chief of Engineers' Report

General Comments

The following summary of the Department's comments corresponds to the six recommendations made by General Read in the Review Report for Water Resources Development (p. 109). Specific comments concerning this report and the Technical Report (Vol. 2) on which it is based are in a subsequent section.

1. Addition of 185 mw of hydro-power at Fort Peck with a re-regulation dam eight miles downstream - The Department opposes the hydro-power facilities as presently planned. The operations at Fort Peck will, through inundation, seriously degrade the aquatic and terrestrial habitat in the project area. In a January 14, 1977, letter to General Read, our Fish and Wildlife Service (FWS) proposed several measures designed to mitigate the impact of these facilities. Included were recommendations that the Corps construct the reregulation dam three miles upstream from the designated site (which would preserve 3 miles of aquatic habitat and 30 acres of terrestrial habitat), that there be a guaranteed minimum instantaneous flow of 3000 cfs and that public access to the tailrace fishery be provided.

Unfortunately, these recommendations have not been incorporated into the revised project plan. We strongly believe loss compensation measures must be included with the final plan. Accordingly,

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3 Recommendations for any mitigation needs can be made a part of the report to be prepared and submitted to Congress on the results of the program. We assure you that your agency will be given this opportunity.

we continue to oppose expansion at Fort Peck without appropriate compensation to the fish and wildlife resource base.

2. Addition of 272 MW of hydro-power at Garrison Dam with a reregulation dam 10 miles downstream - The proposed additional hydro-power at Garrison Dam will have a major impact on the downstream fishery. The "pike hole" area and the tailrace fishery, two of the most popular fishing areas in North Dakota, would be destroyed. This would be accomplished through inundation of the 10 miles between the Fort Peck Dam and Garrison Dam as well as discharge of colder waters from the upstream Garrison Dam. Lastly, about 200 acres of high quality bottomland hardwood habitat will be eliminated by the reregulation reservoir (approximately one third of the existing habitat).

These losses of fish and wildlife resources along with their associated habitat cannot be replaced. Therefore, the Department must oppose the proposed plan to expand hydro-power facilities at Garrison Dam. As an alternative to this plan, and also the reregulation dam at Fort Peck, we recommend serious consideration of offstream pumped storage. This alternative is more preferable to the proposed plan, since it would eliminate the need for the reregulation dams. This, in turn, would allow preservation of the fisheries discussed above as well as the bottomland hardwood habitat which we believe is quite valuable.

Also, our Heritage Recreation and Conservation Service (HCRS) believes that the additional hydro-power units proposed for Fort Peck Dam and Garrison Dam will have a significant effect on recreational activities in the reaches to locations approximately 8 and 10 miles downstream, respectively. A total loss of all recreational activities will occur in these open reaches of the Missouri River. This loss will be quite significant since these areas presently support heavy recreation use.

HCRS goes on to say that the mitigation relative to the present plan is not sufficient. A map should be included showing what facilities will be lost and what will be replaced, along with schedules when the replacement will be necessary for redevelopment to take place. It seems readily apparent that such recreation concerns could also be remedied through employment of pumped storage facilities.

Although FWS proposed the pumped storage alternative in an April-21, 1977, letter to the Corps, the comment-response portion

of the revised DES indicates that the Corps has not yet addressed this issue. Owing to the potential beneficial aspects of pumped storage, opposed to the regulation dams, we believe the Corps should give this alternative full consideration in the final plan.

3. Construction of 1180 mw of pumped storage at Gregory County, South Dakota. - This appears fully acceptable provided fish screening devices and proper energy dissipators are used in the afterbay in the area. One of the revised DES indicates the Corps does not regard this as a significant problem. Although we disagree, this discussion is more appropriate in the general comments on the revised DES (please see p. 12).

4. Construction of bank stabilization at 30 areas of active erosion between Fort Peck Dam and Ponca, Nebraska. - This topic has already been addressed in the introductory remarks of this letter. Accordingly, we do not believe it necessary to repeat that portion of the letter again.

5. Construction of fish rearing ponds and shorelines planting at Lake Oahe and Lake Francis Case. - Both FWS and the South Dakota Department of Wildlife, Parks and Forestry have critically examined the recommended rearing pond concept and do not believe efforts should be exerted at attempting to reestablish a trophy northern pike fishery through pond farming in Oahe Reservoir and Lake Francis Case. Consequently, construction of fish rearing ponds and shoreline plantings at both these sites should be reconsidered.

The Corps' proposal fails to consider the low productivity in the reservoirs, the lack of suitable habitat for northern pike, and the low levels of forage fish abundance. Introducing northern pike could have an adverse effect on the established and self-sustaining walleye population since the two species would have to share a limited forage base. Instead, the Department recommends that efforts be directed toward establishing littoral vegetation areas in the reservoirs for a corresponding increase in the forage base. This can be accomplished by constructing subimpoundments or excavating ponds in favorable locations, coupled with reestablishment of littoral vegetation wherever suitable conditions exist in each reservoir. If an adequate forage base is established, it may then be advisable to consider the introduction of another large predator such as the northern pike.

In terms of management priorities, habitat maintenance within the reservoirs by providing suitable pool levels for spawning, and improvement techniques such as establishment of littoral vegetation should be initiated. In addition, an extensive stocking program. habitat limits both the quantity and quality of fishing that any proposed stocking can provide.

6. Designation of the reach from Gavins Point Dam to Ponca State Park, Nebraska as a National Recreation River under P.L. 90-542. - Inclusion of this segment in the National Wild and Scenic Rivers System will preserve the free-flowing characteristic of the river, and provide future generations with an opportunity to enjoy the values associated with the Missouri in this reach of the river.

4 | Acknowledged.

Specific Comments

Review Report for Water Resources Development (Vol. 1)

1. Page 12, Economics - The first paragraph reads, "In the absence of employment opportunities, the resident population is pressured to become mobile. . . . The last sentence reads, ". . . can be attributed to the mobility of the labor force." These statements contradict each other and appear to be generalizations. A similar statement in Appendix 1, page B-29, paragraph 64, is made.

2. Page 42, Navigation - A statement should be made that the railways will have the capacity to transport all of the coal expected to be transported in the future. If railways are not expected to transport all future coal, benefits could be grossly underestimated. This topic deserves discussion.

3. Page 42, Transportation of Coal - This section discusses alternate coal transportation costs by rail, and rail and barge, emphasizing the cheaper cost of barge transportation and need for navigation waters. The report does not discuss other alternatives, such as barge transportation from Montana, Wyoming, and North Dakota, or the proposed gasification plants in Mercer, McLean, and Oliver Counties, North Dakota. Both of these alternatives would alter water diversion and consumption, and reduce the need for rail or barge transportation.

4. Pages 44 and 45, Economic Analysis for Extending the Navigation Project - Interest during construction is about 50 percent of project costs. This is significantly high and should be explained in the narrative. A similar explanation should be given in Appendix 1, pages D-30-31.

5. Page 56 - Gregory County should be followed with "South Dakota" the first time it is mentioned. Gregory County by itself has little significance to the readers, unlike Garrison and Fort Peck Dams.

6. Page 91 - The table presented is incorrect and should be corrected so it corresponds to the values listed in Appendix 1, table F-29.

Appendix 1, Technical Report (Vol. II)

1. Page B-21, paragraph 51 - A statement should be made explaining that the railroads have the capability and capacity to transport the expected increased coal production since this is the assumption that leads to the infeasibility of increasing the navigable route of the Missouri River.

2. Page C-17, paragraph 19 - The last sentence is not correct. Present Water Resources Council guidelines are different from those used previously. Many economic factors relating to justification of irrigation projects have fluctuated dramatically in recent years and are the primary cause of the negative effect on the feasibility of irrigation projects. This could be short-lived, however.

3. Page C-28, paragraph 71 - This paragraph states "Reduction in lake surface at Fort Peck, Lake Sakakawea, Lake Oahe, and Lake Frances Case should have little overall effect on public recreation opportunities" and "there should be little overall loss of public use." We do not believe these statements accurately reflect the impacts at Lake Oahe, since the upper end of the lake would move approximately 50 miles to Bismarck, North Dakota, leaving General Sully Park and the Garrison and Fort Rice Public Use Areas at some distance from the reservoir. We also believe that more information should be provided on the feasibility of and needs associated with retaining the above recreation areas, developing replacement facilities on the shortened reservoir, and extending existing boat ramps and swimming beaches.

4. Page C-64, table 5 - The second area of concern is erosion of the river bank. Table C-5 shows the site to be located in the most rapidly eroding section of the open river between Fort Peck Dam and Garrison Reservoir. While not a threat to the fort site or park facilities, the bank erosion may adversely affect the proposed scenic protection zone along the south river bank.

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Acknowledged.

5. Pages D-33 through D-38 - Waterlogging in the Buford-Trenton area is of concern to Fort Union Trading Post National Historic Site since many of the proposed facilities will be located in low-lying areas adjacent to the floodplain. Several questions regarding waterlogging in this area seem to have been left unanswered. The report states that additional studies were made to determine how much land would be needed and how soon the land would be needed, but the following statement lists waterlogging under "functions not proposed" saying that either Federal responsibility is not established or the authority to act already exists. If this is the case, what action is being taken regarding the waterlogging problem? Are additional studies being conducted, and if so, when will the information be available?

6. Page D-91, paragraph 200 - The following sentence should be added to this paragraph:

"These structures will be evaluated by a task force composed of representatives of the Corps of Engineers, Heritage Conservation and Recreation Service, Fish and Wildlife Service, the States of Nebraska and South Dakota, and the Missouri River Bank Stabilization Association."

7. Page E-134, paragraph 274 - We suggest that the selected plan make a stronger commitment to the removal of the car bodies and rubble placed along the river banks. Specifically, the Corps of Engineers should initiate action to remove all temporary bank stabilization structures, including car bodies and rubble, and establish erosion control measures that are compatible with National River designation. The costs related to the removal of these temporary structures should be included in F-47.

8. Page F-48, paragraph 26 - The definition of a recreation day is inconsistent with the Principle and Standards. A single unit value will be assigned per recreation day regardless of whether the user engages in one activity or several.

9. Page F-48, paragraph 27 - The values per recreation activity in table 30 should be listed as "values per day" as shown in the P&S. These values should be indexed to present levels.

Revised Draft Environmental Statement

General Comments

The Corps' interpretation of Section 32 of the Water Resources Development Act of 1974, as amended, has already been discussed.

6 Sections VII and XI of the GDM being circulated with this FEIS address your concerns regarding a task force evaluation of streambank erosion control measures to be used in the Missouri National Recreational River corridor.

7 Your concerns regarding the removal of existing incompatible erosion control measures in the recreational river corridor are addressed in Section VII of the GDM being circulated with this FEIS.

8 Noted and concur.

in the introductory remarks of this letter. Accordingly, we will attempt to avoid being repetitious, although we firmly believe this issue should be openly resolved to the satisfaction of all concerned. In this section comments relative to the streambank erosion control program will be of a more substantive nature. In addition, we will not discuss at great length topics that received substantial attention in the prior comments on the Chief's Report. We believe it is reasonable to expect that the Corps' consideration of our comments on that report, and any changes resulting therefrom, will also be reflected in the environmental statement. Areas of particular concern in this respect include the placement of the Ft. Peck reregulation dam as well as pumped storage as an alternative to both Ft. Peck and Garrison Dams. We believe the revised DES should also address our previous comments on the aquatic and terrestrial habitat downstream from Garrison Dam, and the introduction of northern pike to Lake Francis Case and Oahe Reservoir.

1. Endangered Species - The bald eagle uses the mainstem region of the Missouri River for nesting, as a wintering ground, and as a migratory route. On March 16, 1978, the Director of FWS, under authorities contained in the Endangered Species Act of 1973, listed the bald eagle (*Haliaeetus leucocephalus*) as endangered in the conterminous 48 States excepting five States where the species was listed as threatened (none of which are in the project area). Accordingly, the Department believes consultation pursuant to Section 7 of the Act is necessary. Further, a biological opinion is required before there is an irreversible or irretrievable commitment of resources which would preclude consideration of modifications or alternatives to protect this species. This information should also be reflected on page II-11, paragraph 2.29 of the environmental statement.

In addition, the Whooping Crane Recovery Team has recommended the area "from about Audubon National Wildlife Refuge, in McLean County, south along the Missouri River to the junction of the south boundary of Morton County and the Missouri River" be considered for critical habitat designation. The above described area includes the Missouri River between Garrison Dam and Lake Oahe. Since project NOT APPLICABLE In this area, project whooping cranes and their habitat, FWS requested the Corps to initiate Section 7 consultation for this species also. These requests were forwarded to Colonel James Ray, District Engineer in Omaha on July 18, 1978.

2. Streambank Erosion Control Program - The Department believes our most effective comment on the erosion control program is

9 Consultation pursuant to Section 7 of the Endangered Species Act has been completed. Exhibit 1 contains the biological opinion of the Fish and Wildlife Service. The use of the project area as a wintering ground by the endangered bald eagle is discussed in the FEIS in paragraph 4.14.

simply to reiterate the interim Fish and Wildlife Coordination Act report which was sent to the Corps on May 26, 1978. This best represents our primary concerns on this portion of the revised DES.

On the Missouri, actions which reduce channel widths, eliminate oxbows, reduce bank cover or streamside canopy, eliminate well-developed island habitat, result in the loss of terrestrial riparian habitat, or otherwise reduce habitat diversity will result in losses of fish and wildlife and associated environmental values.

Riverine habitats such as those in the project area have become and are becoming increasingly scarce in much of the West and in many other parts of the Nation. As a result, those remaining have a high value and are becoming increasingly valuable.

Actions to solve bank erosion problems have the potential for preserving these habitats. However, they also have the potential for destroying or significantly damaging them if carried to extremes or carried out without sensitivity to environmental values. Measures can be taken to prevent or reduce losses or preserve and restore these environments.

High value riparian terrestrial habitats can be protected in some instances by installing appropriate erosion control devices in specified locations. However, this action itself can precipitate land clearing when carried out to protect private land. Therefore, it must be followed up by acquisition in fee or easement to place these habitats in public ownership.

In other instances, no action at all, or acquisition of adjacent eroding lands, may be the least-cost alternative to solving a bank erosion problem while at the same time maintaining the existing riverine ecosystem. Such action would not only maintain the diversity of terrestrial habitat adjacent to the river, but would preserve aquatic habitats as well. This or another non-structural alternative could emerge as the best solution as a result of studies of the causes of erosion.

In the reach below Garrison Dam, the existing, rather massive structures may be modified to restore habitat. Other methods for improving habitat may emerge as a result of further study.

We recognize that some structures will be necessary. However, wherever structures are built, they should be of the "soft"

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Your concerns are noted. The Omaha District supports the concept of land use preservation along the project river reaches. However, clearing along these reaches in recent years has occurred almost totally in the absence of erosion control measures. Acquisition of eroding lands is an alternative to erosion control relative to cost only. It is not an alternative solution to the erosion problems.

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The Omaha District has made extensive efforts to improve coordination of all erosion control projects on the Missouri River reach downstream of Garrison. Significant structure modifications to reduce adverse environmental and aesthetic effects have resulted from these efforts.

type--no more than necessary to check erosion--and installed with due regard to potentials for changing instream hydraulics which could affect aquatic environmental values. They should not reduce channel widths, nor eliminate oxbows, nor should they induce erosion at new locations that will require additional structures.

Proper maintenance that will allow the reestablishment of native vegetation on structures will not only provide wildlife and fishery habitat but will meet aesthetic criteria as well. These potentials can be developed by incorporating these fish and wildlife environmental concerns into the study and planning process.

We recommend that before proceeding with extensive bank stabilization on the Missouri River the Corps ensure:

a. Land and water management alternatives be developed for each of these planning units which fully consider environmental concerns, as prescribed by the Water Resources Council's Principles and Standards.

b. Studies undertaken to evaluate the physical consequences of installing bank erosion control structures not be limited simply to determining the effectiveness of specific structures in checking erosion but that they also include their effects on river hydraulics, including determining to what extent the structures affect flow velocities and directions; their impact on stream cross-sections, especially degradation; the potential for initiating erosion at new locations; and their impact on river aesthetics, and

c. Concurrent studies be carried out to determine definitively the impacts on fish and wildlife and the environment and measures for preventing losses and improving habitat.

d. Each site selected for demonstration purposes be treated individually and that an adequate mitigation plan be developed for each site, as is done with other water projects, pursuant to the Fish and Wildlife Coordination Act, 16 U.S.C. 661; et seq., and

e. Such mitigation plans assure that aquatic habitats and terrestrial wildlife habitats on the high banks will be preserved and not cleared for agricultural purposes once the banks are stabilized.

The actions and considerations addressed in these paragraphs are now an integral part of the erosion control demonstration project planning and design.

The alternatives to erosion problems on the Missouri River reaches have been discussed numerous times. Literally dozens of public forums have been conducted since 1971 on this topic. The results of these forums and the great majority of correspondence received concerning the erosion problems provide an overwhelming expression by those being adversely affected by erosion that:

(1) The erosion problems downstream from the dams is a Federal responsibility and the enormous regional and national benefits from the reservoir system are provided at the expense of the few downstream interests.

(2) Solutions or alternatives leading to further loss of now scarce Missouri River bottomland are opposed both by local residents and most State and local Government interests.

(3) Any attempts to control or limit the rights and activities of the local interests are strongly opposed.

The physical consequences of installing erosion control structures are carefully considered during planning and design, and are thoroughly monitored after construction. This has been done regularly on Omaha District erosion control projects, long before the Section 32 program was authorized. Monitoring and evaluation of esthetic and environmental values, including fish and wildlife values, has been initiated on all erosion control projects since the authorization of the Section 32 Demonstration Program.

Your concerns are addressed in paragraphs 4.01 and 4.25 in the Streambank Erosion Control Final Environmental Statement.

We believe the Fish and Wildlife Coordination Act provides the Corps with sufficient authority to prevent or mitigate losses associated with construction at demonstration sites without additional Congressional authorization, including authority to acquire land or interests in land sufficient to preserve high bank habitats. However, if the Corps of Engineers believes it needs additional, explicit authority to implement these measures, we recommend that the Corps seek such approval.

3. Entrainment and Impingement - In response to an FWS comment concerning entrainment and impingement at the Gregory County pumped storage project, the Corps stated that research results at Muddy Run concluded that there was "no significant fish population reduction as a result of project operation. The Department does not think this potential impact should be dismissed so lightly. The Corps recognizes that mortality of aquatic biota due to entrainment and impingement at power plant intakes produces substantial impacts on riverine and lacustrine ecosystems. The results at Muddy Run are encouraging, but by no means conclusive, and moreover, may well have some site-specific factors contributing to the outcome. For example, the generating capacity at Muddy Run is 880 mw compared to the 1,180 mw planned at Gregory County.

Consequently, we believe the following concerns should be addressed by the Corps during the advanced design phase of the project:

1. Accurate delineation of movement patterns of the critical fishery resource through the zone of withdrawal.
2. Description of the physical and biological phenomena that may increase the vulnerability of a species to impingement such as temperature, currents, behavior, etc.
3. Evidence that fish returned to the water body will survive, grow, and reproduce successfully if fish bypass systems are utilized.
4. Estimation of the numbers and sizes of impinged species in relation to the quantity of water passing through the plant, intake current velocities, season, water temperatures, illumination, and other environmental conditions.
5. Estimation of the population of impingeable stocks of aquatic organisms.

More detailed analyses of alternate intakes that will reduce entrainment and impingement are found in the Atomic Industrial Forum Sourcebook on Cooling Water Intakes (Battelle, 1975) and the U. S. Environmental Protection Agency's Cooling Water Intake Development Document. Guidelines related to power-plant intake velocity impacts on aquatic resources are presented in the U. S. Environmental Protection Agency's 316(b) Technical Guidance Manual.

4. Recreation and Cultural Resources - The assessment of impacts on recreation resources is generally adequate. However, the final statement should recognize that the proposed Lewis and Clark National Historic Trail parallels the Missouri River throughout the length of the study corridor. This trail has been proposed for inclusion in the National Trails System, and a bill, S. 2664, has been introduced into the Senate to accomplish this. At this time, there are no statutory restrictions for protection of the trail corridor. However, we urge that the project be accomplished in a manner which minimizes adverse visual impacts and preserves historic and scenic values in the trail corridor. Any such impacts which will be unavoidable should be described in the final statement.

Impacts upon cultural resources have not been adequately assessed. This stems from a lack of data concerning the numbers and kinds of resources within the proposed project areas. For purposes of current planning, little reliance can be placed on the limited appraisals of reservoir areas performed some years ago by the River Basin Surveys of the Smithsonian Institution. These appraisals were neither comprehensive, nor were they designed to meet the needs of legislative compliance.

A data inventory is needed for confident decisionmaking. In order to best use the public funds expended for mitigation, the inventory (or its components) needs to be assessed by the criteria of the National Register of Historic Places, and by the unavoidable adverse impacts of the project. Consequently, the detrimental effects of additional hydropower facilities, bank stabilization, and construction of fish-rearing ponds are not adequately addressed in Section IV. We note that specific project areas have been selected, but that the cultural contents of these areas are not presented. Without the requisite data, credible decisions cannot be made regarding detrimental effects. Also, no information is provided on the effects of barging and dredging operations where such may be used.

16 16 The Lewis and Clark National Historic Trail was made a reality under Public Law 95-625 on 10 November 1978. Your concerns are addressed in Section IV of the GDM that is being circulated with this FEIS.

17 17 This FEIS, the GDM, and the Streambank Erosion Control Final Environmental Statement adequately address these concerns.

5. National Historic Sites - The statement is very much in need of good location maps for the project sites, particularly for the reregulation dam proposed at Garrison. Although the map on page I-19 is obviously not designed to illustrate much beyond the various levels of inundation, we are forced to use it to assess impacts on the National Historic resources. Incidentally, Section 1.3.3 on page I-19 includes the drawing in Figure 8 (page I-18), as the "reregulation structure and the attendant reservoir." Figure 8 is actually the existing Garrison Dam and the National Fish Hatchery. This reference should be to Figure 9 and a subsequent reference to Figure 9 should actually be Figure 10.

Most of the project area lies within one-half mile of the northeast corner of Knife River Indian Villages National Historic Site. Consequently, the structure would be highly visible from within the park and represents a serious intrusion upon the historic scene so important to the integrity of the park. In addition, the nearest existing access road to the west bank crosses the north portion of the Knife River Villages near the Big Hidatsa Site. Increased use of this road for construction and recreation purposes would create a traffic impact in this area that would result in safety considerations as well as concern for aesthetic and archeological resources in the north portion of the park.

Although the present plan does not call for a public road access across the reregulation dam, this possibility exists. Some benefit would accrue to workers and residents of the Missouri River who travel to the Coal Creek power plant at Underwood. This would funnel large volumes of nonrecreation traffic through the park further compounding the impact.

We are particularly concerned about two other areas. First, fluctuations in downstream river stages will be reduced compared to existing fluctuations according to the proposal. Does this relate to daily actual existing fluctuations or existing authorized fluctuations? According to Figure 10, the fluctuation at the mouth of the Knife River will be 4 feet. This will cause a corresponding daily fluctuation at the mouth of the Knife River resulting in erosion and some aesthetic impacts in the park.

Second, the proposed full pool elevation of 1682' MSL causes some concern for ground water and archaeological information. A primary archaeological site is within 1 mile of the site at an elevation

of 1685' MSL. Will the water table be high enough to saturate low-lying areas destroying subsurface archeological material?

Will we be unable to develop visitor facilities which require excavation for footings or basements? Will an existing residence be in danger of water seeping into the basement causing structural collapse?

6. Public Hearings - The testimony presented at the December 12, 1977, public hearing in Bismarck, North Dakota, is not contained or referenced in the revised draft. Approximately, 40 to 50 persons provided testimony at the hearing. We suggest that the comments received at the public hearing be evaluated and added to the statement.

7. Habitat Evaluation - The revised statement would more adequately address the impacts and permit easier comparisons of impacts to fish and wildlife resources occurring from differing alternatives if losses from all alternatives were quantified using habitat unit evaluations. The extent to which losses will be reduced by implementation of mitigation recommendations could then be addressed in more specific terms, and the amount of unmitigated losses would be readily apparent.

Specific Comments

1. Page I-17, paragraph 1.37 - This paragraph should be expanded to include the possibility of adding a pumping station in the vicinity of the proposed flap gate. This would allow for water to be pumped out of the canal at high water periods and discharged into the river. This is especially important during early summer when many of the rearing ponds have to be drawn down simultaneously. If the drainage and fish collections are accomplished in a timely manner, cannibalism will be avoided.

2. Page I-21, paragraph 1.38 - The conversion of the Riverdale Game Management Area from woodland habitat to marsh-savannah habitat will also have adverse impacts. However, we are unable to assess the extent of the potential loss compensation measures be identified until more information concerning soil permeability and the effect of this conversion on ground water is furnished for review.

3. Page I-21, paragraph 1.39 - Construction of secondary facilities to supply water for municipal and agricultural use should be

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Some HEP (habitat evaluation procedures) analysis was done on an experimental basis for some of the alternatives. This is evidenced by the information presented in Section IV of the Revised Draft EIS. The Phase I studies will include expanded fish and wildlife habitat evaluation; however, this analysis may not necessarily follow the HEP procedures.

fully explored before implementation. In that way, serious loss of fish and wildlife habitat can be prevented or mitigated, and possible enhancement opportunities can be advanced. It should be noted that a detailed environmental impact study will be required for all significant secondary water supply projects.

4. Page I-23, paragraph 1.47 - In their 1977 correspondence our Bureau of Reclamation stated that they would prepare a report and environmental statement on transmission lines associated with the new generation facilities. The statement included in paragraph 1.47 is no longer correct since transmission responsibilities were transferred to the Department of Energy.

5. Page I-23, paragraph 1.47 - Three of the proposed power transmission corridors, Fort Peck to Williston, Garrison to Bismarck, and Garrison to Jamestown, appear to pass through major coal-fields. If the corridors are so used, measures should be included to avoid preempting mining development and rendering these resources irretrievable.

6. Page III-2, paragraph 3.03 - The use of the term "exploration" is incorrect; the term "development" should be substituted.

7. Page IV-2, Garrison - The second sentence should be deleted since the water retention in the reregulation pool may be so short as to preclude any warming action. Even if the water were warmed slightly, many other variables such as substrate, water quality, and invertebrate production need to be evaluated before any determination could be made as to the impact on the river fishery. The third sentence should be deleted to include the fact that recently established coho runs may be eliminated altogether. These fish were "scent implanted" at the hatchery so they would return at maturity. If the hatchery were relocated, it is not known what would happen to the established coho spawning runs.

8. Page IV-5, paragraph 4.04 - This paragraph states:

Because the Wild and Scenic River designation proposal incorporates 1,700 acres of scenic easement of high bank land in this river reach which will restrict timber removal, the opportunity for landowners to convert a significant amount of prize river woodland to cropland will not exist. Hence, the indirect environmental effect of such a conversion is avoided.

There are approximately 6,000 acres of cottonwood-dominated woodlands within a peripheral band of land one-half mile from the river. Providing protection for up to 28 percent of the woodland is significant, but 4,300 acres of this irreplaceable habitat type will be left vulnerable to clearing. The opportunity for landowners to convert 62 percent of this riparian habitat to cropland will remain. The Corps should seek methods to mitigate this potential impact.

9. Page IV-6, paragraph 4.10 - It is doubtful that by merely warming the water the relative abundance of fish species will increase in the river. Other aquatic parameters such as water quality, fluctuation of water levels, and abundance of benthic organisms need to be evaluated before any such determinations can be made.

10. Page IV-12, paragraphs 4.33 and 4.42 - The statements on the expected low frequencies of undisturbed cultural resources within low valley lands and frequently flooded areas are not supported by any data. To the contrary, reconnaissance by the River Basin Surveys recorded abundant sites of extended occupation on islands and floodplains. Euro-american settlements were also noted, but generally not recorded.

11. Page IV-18, paragraph 4.53 - Detrimental effects of increased public land use on the cultural resources of the proposed National Recreation River should be addressed in this section.

12. Page V-2, paragraph 5.10 - Highbank stabilization will not directly channelize the river. However, secondary impacts associated with these structures could reduce channel width, reduce bank cover or streamside canopy, eliminate well developed island habitat, result in the loss of terrestrial habitat, reduce habitat diversity, and, overall, result in loss of fish and wildlife and associated environmental values.

13. Page VI-1, paragraphs 6.01 and 6.02 - Project costs and project benefits appear to be the major criteria used for rejecting proposed NED or EQ study elements. In the case of bank stabilization features, no benefit to cost analysis is provided. This should be corrected by formation of a clear and concise benefit/cost analysis for the erosion control program. It would be extremely helpful while reviewing this project to be able to determine what funds are being allocated to which erosion sites. Both a programmatic and site specific budget analysis should be included in Exhibit I (Summary of Project Economics).

19 19

Reference Section I of the GDM. The selected plan has the potential of preserving 8,293 acres of land. Much of this land will be cottonwood-dominated woodlands.

20 20

Concur. Paragraph 5.9 of the FEIS addresses your concerns.

21 21

These concerns are believed to be adequately addressed in the Streambank Erosion Control Final Environmental Statement.

14. Page VII-1, paragraph 7.02 - Stating that a reregulation dam will enhance long-term productivity on the remaining open river reaches between Garrison Dam and Lake Oahe is not supported by biological facts. The Corps should either provide data to reinforce this claim or remove this comment from the environmental statement.

15. Page EX-I-1, Summary of Project Economics, Hydropower-Economic Summary Table - The value of the recreation loss is questionable. The \$2,000,000 figure needs to be revised. The FWS and the North Dakota Game and Fish Department believe that this figure would be low if the fishery alone were being considered.

16. Page A-15, (comment-response) - In response to earlier comments from our Bureau of Mines, the Corps states "Mineral evaluation has not been conducted since further site studies need to be accomplished after project authorization." We believe that this is an inadequate response because sites for the reregulation dams and the pump storage facility already have been determined. In the selection of sites, the Corps likely has at least a preliminary geologic hearing study and, therefore, some information concerning mineral resources already may be available. Geologic information is included for the pump storage reservoir in the Review Report for Water Resources Development, but none of the sites are discussed in the revised draft environmental statement. It appears from the literature that the proposed projects probably would have no significant impact on mineral availability, but more specifics are required.

17. Page A-25, (comment-response) - Our Bureau of Reclamation pointed out that paragraph 1.38 involved only a change in ownership of lands acquired for mitigation which, by itself, would not increase their productivity. The Corps' response refers to both acquisition and exclusive management of 284 acres for wildlife. The text of paragraph 1.38 refers solely to fee acquisition of 270 acres; no management plans are described.

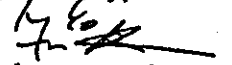
18. Page A-24, (comment-response) - The Corps did not respond to Reclamation's comment on paragraph 4.19 (original DES) dealing with impacts of collecting field stone on vegetation and wildlife. Instead, the Corps wrote that paragraph 4.22 states rock will be taken from existing quarries. Paragraph 4.22 states rock from both quarries and field stone will be used. In addition,

22 22 Paragraphs 4.17 through 4.19 of the Streambank Erosion Control Final Environmental Statement address your concerns.

paragraph 4.23 does not address the effects of field stone gathering on surface-exposed and buried resources. It is possible that sufficient evidence may remain in Hughes County, South Dakota, from Oahe Dam construction to study such effects.

We hope these comments and recommendations will be of assistance.

Sincerely,



Deputy Assistant Secretary
Larry E. Meierotto
SECRETARY

CORPS OF ENGINEERS RESPONSES